DOCUMENT RESUME

ED 448 309 CE 081 080

| | |
|---|---|
| TITLE | Food Production, Management, and Services. Reference Book [and] Student Activity Book. |
| INSTITUTION | Texas Tech Univ., Lubbock. Curriculum Center for Family and Consumer Sciences. |
| SPONS AGENCY | Texas Education Agency, Austin. Div. of Career and Technology Education. |
| PUB DATE | 2000-00-00 |
| NOTE | 838p.; Partially funded under Public Law 101-392, Carl D. Perkins. Updates ED 306 385. Lynn Perrin served as director of development for both volumes and staff writer for the Reference Book. Sonja D. Koukel served as staff writer for the Student Activity Book. A three-page 'crosswalk' of the Reference book with the 1993 Curriculum Guide (ED 376 284) is included. |
| AVAILABLE FROM | Curriculum Center for Family and Consumer Sciences, Texas Tech University, Box 41161, Lubbock, TX 79409-1116. Tel: 806-742-3029; Fax: 806-742-3029. |
| PUB TYPE | Guides - Classroom - Learner (051) |
| EDRS PRICE | EDRS Price MF05 Plus Postage. PC Not Available from EDRS. |
| DESCRIPTORS | Adjustment (to Environment); Behavioral Objectives; Career Development; Competence; *Competency Based Education; Cooks; Definitions; Dietetics; Dining Facilities; Education Work Relationship; Employment Opportunities; Employment Projections; Employment Qualifications; Equipment Utilization; Food; Food Handling Facilities; *Food Processing Occupations; *Food Service; Food Standards; Foods Instruction; High Schools; Home Economics Skills; Job Skills; Labor Force Development; Learning Activities; Managerial Occupations; Marketing; Nutrition; Occupational Clusters; Occupational Home Economics; Occupational Safety and Health; Personnel Management; Productivity; Public Relations; Sanitation; *State Standards; Statewide Planning; Vocabulary; Vocabulary Development; Work Environment; Workbooks |
| IDENTIFIERS | *Family and Consumer Sciences; *Texas |

ABSTRACT

This student activity book and reference book, which are part of a family and consumer sciences education series focusing on a broad range of employment opportunities, are intended for use in one- and two-year food production, management, and services programs for Texas high school students. The reference book provides information needed by employees in the food service occupational area. Each chapter includes the following components: (1) a list of the Texas Essential Knowledge and Skills that are discussed in the chapter; (2) a list of chapter vocabulary; (3) italicized, bold-faced vocabulary terms with definitions or explanations; (4) illustrations of equipment and procedures used in the industry today; (5) boxes posing "essential questions" about the materials presented; and (6) chapter highlights. Concluding the reference book are a 22-item reference list and an index. The student activity book provides a variety of pencil-and-paper activities designed to correlate with and reinforce the concepts presented in the reference book. Both books contain 40 chapters that

Reproductions supplied by EDRS are the best that can be made
from the original document.

are organized under the following eight broad content areas: the food service industry; quality food service; safety and sanitation; nutrition; tools, equipment, and supplies; food preparation; food service management; and marketing and public relations. (MN)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 448 309

# Food Production, Management, and Services.

## Reference Book [and] Student Activity Book.

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL IN MICROFICHE
AND IN ELECTRONIC MEDIA FOR ERIC
COLLECTION SUBSCRIBERS ONLY
HAS BEEN GRANTED BY

M. Wragg

2A TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

CE 081080

BEST COPY AVAILABLE

# FOOD
## PRODUCTION, MANAGEMENT, AND SERVICES
## REFERENCE BOOK

3

FAMILY AND CONSUMER SCIENCES EDUCATION • TEXAS EDUCATION AGENCY • AUSTIN, TEXAS

CE 081 080

BEST COPY AVAILABLE

# Food Production, Management, and Services

## Reference Book

Developed and disseminated by:
The Curriculum Center for Family and Consumer Sciences
Texas Tech University
Box 41161
Lubbock, TX 79409-1161

In cooperation with:
Texas Education Agency
Division of Career and Technology Education
Family and Consumer Sciences Education
Austin, Texas

July, 2000

# *Acknowledgments*

The *Food Production, Management, and Services Reference Book* was prepared by the staff of The Curriculum Center for Family and Consumer Sciences. Development was jointly funded by the Texas Education Agency under Public Law 101-392, Carl D. Perkins, and by The Curriculum Center for Family and Consumer Sciences.

The following individuals made special contributions to the development of this publication.

**The Staff of the Texas Education Agency Family and Consumer Sciences Education Unit:**

Gay Nell McGinnis
Program Director

Cindy Gruner
Program Specialist

Sharon Pierce
Program Specialist

Diane Salazar
Program Specialist

**The Staff of The Curriculum Center for Family and Consumer Sciences:**

Marilyn Wragg
Director

Lynn Perrin
Associate Director

Debbie Mumme, PhD
Curriculum Project Coordinator

Karla Duckworth
Curriculum Project Coordinator

Tracy Givens
Information Specialist/Editor

Sonja D. Koukel
Research Assistant

Becky Martinez
Editorial Assistant

Lacey Palmieri
Editorial Assistant

*******

Special acknowledgment is given to Donna-Jean Hunt, PhD, RD, LD for sharing her expertise and serving as primary contributor to the 2000 edition of the *Food Production, Management, and Services Reference Book*. Dr. Hunt is Assistant Professor and Director of the Approved Preprofessional Practice Program (AP4) at Stephen F. Austin State University. She has 25 years of experience as a registered dietitian with extensive experience in clinical and public health nutrition. She currently teaches dietetics and foodservice operations and management courses at the university level.

*******

Lynn Perrin served as staff writer and director of development for this publication.

## Review Committee

Gail Greer
Family and Consumer Sciences Teacher
Tascosa High School
Amarillo, Texas

Lance Reader
Director of Catering
University Center
Texas Tech University
Lubbock, Texas

Beth Peables
Family and Consumer Sciences Teacher
Abilene High School
Abilene, Texas

Laura Telles
Family and Consumer Sciences Teacher
Center for Career and Technology Education
El Paso, Texas

# Compliance Statement

## TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION

Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a nonsegregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, U.S. Department of Education.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

## TITLE VII, CIVIL RIGHTS ACT OF 1964; EXECUTIVE ORDERS 11246 AND 22375; TITLE IX, 1973 EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; AND VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED IN 1974

It is the policy of the Texas Education Agency to comply fully with the nondiscrimination provisions of all federal and state laws and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any programs or activities which it operates on the grounds of race, religion, color, national origin, sex, handicap, age, or veteran status (except when age, sex, or handicap constitute a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency makes positive efforts to employ and advance in employment all protected groups.

# Table of Contents

## *THE FOODSERVICE INDUSTRY*

Chapter 1 – The Food Production and Service Industry ........ 1
- Chapter Focus ........ 1
- Chapter Vocabulary ........ 1
- The Foodservice Industry ........ 2
- Types of Foodservice Units ........ 3
- Ownership and Management Structures ........ 4
- Advantages and Disadvantages of Foodservice Work ........ 6
- Future Outlook of the Foodservice Industry ........ 7
- Professional Organizations Serving the Foodservice Industry ........ 8
- Chapter Highlights ........ 10

Chapter 2 – Careers in Foodservice ........ 11
- Chapter Focus ........ 11
- Chapter Vocabulary ........ 11
- Career Opportunities in Foodservice ........ 12
- Categories of Foodservice Careers ........ 13
- Experience, Education, and Training for Careers in Food Production, Management, and Services ........ 15
- Chapter Highlights ........ 18

## *QUALITY FOODSERVICE*

Chapter 3 – Providing Quality Service ........ 19
- Chapter Focus ........ 19
- Chapter Vocabulary ........ 19
- Personal Skills for Foodservice Occupations ........ 20
- Customer Relations ........ 24
- Sales Techniques ........ 27
- Managing Service Responsibilities ........ 30
- Chapter Highlights ........ 33

Chapter 4 – Forms of Service ........ 35
- Chapter Focus ........ 35
- Chapter Vocabulary ........ 35
- Forms of Service ........ 35
- Table Settings ........ 38
- Chapter Highlights ........ 44

Chapter 5 – Table Service ........ 45
- Chapter Focus ........ 45
- Chapter Vocabulary ........ 45
- Welcoming and Seating Customers ........ 46
- Food and Beverage Orders ........ 47
- Serving Food and Beverages ........ 54
- Clearing the Table ........ 58
- Chapter Highlights ........ 59

Chapter 6 – Sidework .......... 61
Chapter Focus .......... 61
Chapter Vocabulary .......... 61
Sidework Routines .......... 62
Work Area Duties .......... 64
Equipment and Supplies Used in Sidework .......... 68
Chapter Highlights .......... 70

Chapter 7 – Counter Service and Self-service .......... 71
Chapter Focus .......... 71
Chapter Vocabulary .......... 71
Counter Service .......... 72
Self-service .......... 74
Chapter Highlights .......... 80

Chapter 8 – Specialized Types of Foodservice .......... 81
Chapter Focus .......... 81
Chapter Vocabulary .......... 81
Specialized Foodservice .......... 82
Preparation and Service Techniques .......... 85
Food Presentation and Artistic Technique .......... 89
Chapter Highlights .......... 91

Chapter 9 – The Check, Change, and Gratuities .......... 93
Chapter Focus .......... 93
Chapter Vocabulary .......... 93
The Check .......... 93
The Payment .......... 95
Gratuities and Service Charges .......... 97
Managing Counter Items .......... 99
Chapter Highlights .......... 100

## *SAFETY AND SANITATION*

Chapter 10 – Safe and Efficient Workplace Practices .......... 101
Chapter Focus .......... 101
Chapter Vocabulary .......... 101
Safety Obligations of Foodservice Management .......... 102
Major Causes of Foodservice Accidents .......... 102
Accident Prevention .......... 104
Chapter Highlights .......... 108

Chapter 11 – Emergency Procedures .......... 109
Chapter Focus .......... 109
Chapter Vocabulary .......... 109
Fire Safety .......... 109
Types of Fire Extinguishers .......... 111
Weather Emergencies .......... 113
Medical Emergencies .......... 114
Accident Reports .......... 118
Chapter Highlights .......... 120

Chapter 12 – Employee, Equipment, and Facility Sanitation ........ 121
  Chapter Focus ........ 121
  Chapter Vocabulary ........ 121
  Sanitation Codes for Foodservice ........ 122
  Sanitation for Foodservice Personnel ........ 123
  Dishwashing and Storage of Clean Tableware and Utensils ........ 126
  Sanitation Requirements ........ 128
  Pest Control ........ 131
  Chapter Highlights ........ 134

Chapter 13 – Food Safety and Sanitation Techniques ........ 135
  Chapter Focus ........ 135
  Chapter Vocabulary ........ 135
  Foodborne Illness ........ 136
  Sanitation, Food Preparation, and Service ........ 142
  Hazard Analysis Critical Control Point Model ........ 143
  Chapter Highlights ........ 147

## *NUTRITION: IT'S FOR EVERYONE*

Chapter 14 – Nutrition Matters ........ 149
  Chapter Focus ........ 149
  Chapter Vocabulary ........ 149
  Functions of Food ........ 150
  The Essential Nutrients ........ 150
  Nutritional Needs ........ 157
  Dietary Guidelines ........ 162
  Factors Affecting Eating Habits ........ 166
  Meal Patterns ........ 168
  Chapter Highlights ........ 170

Chapter 15 – Meeting Special Needs ........ 173
  Chapter Focus ........ 173
  Chapter Vocabulary ........ 173
  Institutional Foodservice ........ 174
  Medical Nutrition Therapy ........ 178
  Chapter Highlights ........ 182

## *TOOLS, EQUIPMENT, AND SUPPLIES*

Chapter 16 – Food Production Equipment ........ 183
  Chapter Focus ........ 183
  Chapter Vocabulary ........ 183
  Use and Care of Food Preparation Equipment ........ 184
  Use and Care of Cooking Equipment ........ 192
  Chapter Highlights ........ 199

Chapter 17 – Cold Storage, Serving, and Cleaning Equipment ........ 201
  Chapter Focus ........ 201
  Chapter Vocabulary ........ 201
  Proper Use of Equipment ........ 202

Use and Care of Holding and Serving Equipment ........ 204
Use and Care of Cleaning and Disposal Equipment ........ 206
Work Stations ........ 209
Chapter Highlights ........ 212

Chapter 18 – Tools and Utensils ........ 213
Chapter Focus ........ 213
Chapter Vocabulary ........ 213
Tools and Utensils ........ 214
Utensil Selection ........ 221
Transporting Equipment ........ 223
Chapter Highlights ........ 225

Chapter 19 – The Foodservice Pantry: Food and Supplies ........ 227
Chapter Focus ........ 227
Chapter Vocabulary ........ 227
Forms and Quality of Food ........ 228
Food Specifications ........ 231
Types of Supplies ........ 233
Receiving Food and Supplies ........ 233
Storage of Food and Supplies ........ 239
Requisitioning ........ 241
Supply Inventory ........ 242
Chapter Highlights ........ 243

**FOOD PREPARATION**

Chapter 20 – Food Preparation Techniques ........ 245
Chapter Focus ........ 245
Chapter Vocabulary ........ 245
Standardized Recipes ........ 246
Recipe Use ........ 252
Work Simplification ........ 256
Plating the Food ........ 259
Chapter Highlights ........ 262

Chapter 21 – Beverages ........ 263
Chapter Focus ........ 263
Chapter Vocabulary ........ 263
Beverage Service ........ 264
Types of Beverages ........ 264
Chapter Highlights ........ 270

Chapter 22 – Appetizers ........ 271
Chapter Focus ........ 271
Chapter Vocabulary ........ 271
Types of Appetizers ........ 271
Preparing and Serving Appetizers ........ 275
Holding and Storing Appetizers ........ 276
Chapter Highlights ........ 277

Chapter 23 – Soups and Sauces ........ 279
Chapter Focus ........ 279
Chapter Vocabulary ........ 279
Stocks ........ 279
Soups ........ 280
Sauces ........ 282
Chapter Highlights ........ 287

Chapter 24 – Salads ........ 289
Chapter Focus ........ 289
Chapter Vocabulary ........ 289
Types of Salads ........ 289
Menu Uses of Salads ........ 291
Parts of A Salad ........ 293
Preparing and Storing Salad Ingredients ........ 294
Salad Production ........ 298
Serving, Garnishing, and Storing Salads ........ 299
Chapter Highlights ........ 301

Chapter 25 – Sandwiches ........ 303
Chapter Focus ........ 303
Chapter Vocabulary ........ 303
Types of Sandwiches ........ 304
Parts of A Sandwich ........ 304
Sandwich Preparation ........ 305
Garnishing, Serving, and Storing Sandwiches ........ 308
Chapter Highlights ........ 310

Chapter 26 – Meat, Poultry, and Fish ........ 311
Chapter Focus ........ 311
Chapter Vocabulary ........ 311
Meat ........ 312
Meat Cookery ........ 315
Poultry ........ 317
Poultry Cookery ........ 319
Fish ........ 320
Fish Cookery ........ 323
Chapter Highlights ........ 324

Chapter 27 – Eggs and Cheese ........ 325
Chapter Focus ........ 325
Chapter Vocabulary ........ 325
Eggs ........ 325
Egg Cookery ........ 328
Service, Care, and Storage of Eggs ........ 332
Cheese ........ 334
Cheese Cookery ........ 338
Care, Service, and Storage of Cheese ........ 338
Chapter Highlights ........ 340

Chapter 28 – Vegetables and Fruits ........ 341
  Chapter Focus ........ 341
  Chapter Vocabulary ........ 341
  Selecting Vegetables and Fruits ........ 341
  Menu Uses of Vegetables and Fruits ........ 346
  Preparation of Vegetables and Fruits ........ 347
  Cooking Vegetables and Fruits ........ 347
  Serving and Garnishing Vegetables and Fruits ........ 353
  Holding and Storing Vegetables and Fruits ........ 354
  Chapter Highlights ........ 355

Chapter 29 – Cereals and Pastas ........ 357
  Chapter Focus ........ 357
  Chapter Vocabulary ........ 357
  Selection of Cereals and Pastas ........ 357
  Cooking Cereals and Pastas ........ 361
  Holding and Storing Cereals and Pastas ........ 362
  Chapter Highlights ........ 364

Chapter 30 – Breads ........ 365
  Chapter Focus ........ 365
  Chapter Vocabulary ........ 365
  Types of Bread ........ 365
  Menu Uses of Breads ........ 367
  Ingredients for Making Breads ........ 367
  Preparing Breads ........ 370
  Serving Breads ........ 378
  Holding and Storing Breads ........ 378
  Chapter Highlights ........ 379

Chapter 31 – Desserts and Cookies ........ 381
  Chapter Focus ........ 381
  Chapter Vocabulary ........ 381
  Types of Desserts ........ 381
  Preparing Desserts ........ 384
  Garnishing, Serving, and Storing Desserts ........ 388
  Types of Cookies ........ 389
  Preparing Cookies ........ 391
  Holding and Storing Cookies ........ 393
  Chapter Highlights ........ 394

Chapter 32 – Cakes, Fillings, Frostings, and Icings ........ 395
  Chapter Focus ........ 395
  Chapter Vocabulary ........ 395
  Cakes and Their Characteristics ........ 396
  Preparing Cakes ........ 397
  Preparing Frostings, Icings, and Fillings ........ 402
  Frosting Cakes ........ 404
  Decorating Cakes ........ 406
  Cutting and Serving Cakes ........ 412
  Chapter Highlights ........ 414

Chapter 33 – Pastries and Pies ........ 415
  Chapter Focus ........ 415
  Chapter Vocabulary ........ 415
  Pastry Products ........ 415
  Pastry Dough ........ 417
  Pastry Fillings ........ 420
  Pastry Toppings ........ 422
  Storing and Serving Pies and Pastries ........ 423
  Chapter Highlights ........ 424

## *FOODSERVICE MANAGEMENT*

Chapter 34 – Management Responsibilities ........ 425
  Chapter Focus ........ 425
  Chapter Vocabulary ........ 425
  Being a Manager ........ 426
  Organizational Goals, Policies, and Procedures ........ 428
  Laws and Codes Related to Foodservice ........ 431
  Chapter Highlights ........ 434

Chapter 35 – Food Cost Control ........ 435
  Chapter Focus ........ 435
  Chapter Vocabulary ........ 435
  Menus: The Framework of Cost Control ........ 435
  Food Cost Controls ........ 438
  Standardized Recipes ........ 440
  Chapter Highlights ........ 445

Chapter 36 – Acquisition and Storage of Food and Supplies ........ 447
  Chapter Focus ........ 447
  Chapter Vocabulary ........ 447
  Purchasing Food and Consumable Supplies ........ 447
  Receiving, Inspection, and Storage ........ 453
  Chapter Highlights ........ 455

Chapter 37 – Finance and Accounting ........ 457
  Chapter Focus ........ 457
  Chapter Vocabulary ........ 457
  The Financial Aspects of Foodservice Operations ........ 458
  Computers in Foodservice ........ 464
  Selecting a Computer System for Foodservice ........ 466
  Chapter Highlights ........ 467

Chapter 38 – Human Resources and Productivity ........ 469
  Chapter Focus ........ 469
  Chapter Vocabulary ........ 469
  Human Resources ........ 469
  Working with Foodservice Employees ........ 472
  Controlling Labor Costs ........ 474
  Production and Quality Control ........ 477
  Chapter Highlights ........ 480

## *MARKETING AND PUBLIC RELATIONS*

Chapter 39 – Marketing ........ 481
  Chapter Focus ........ 481
  Chapter Vocabulary ........ 481
  Marketing Programs ........ 482
  Developing A Marketing Plan ........ 485
  The Menu As A Marketing Tool ........ 487
  Special Marketing Techniques ........ 489
  Chapter Highlights ........ 491

Chapter 40 – Building and Maintaining Customer Relations ........ 493
  Chapter Focus ........ 493
  Chapter Vocabulary ........ 493
  Quality Assurance ........ 494
  Complaint Resolution ........ 494
  Using Technology to Accommodate Customers ........ 497
  Chapter Highlights ........ 498

References ........ 499

Index ........ 501

# Chapter 1

# The Food Production and Service Industry

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

1A Describe the organizational structure of food production and service systems.

1C Analyze societal, cultural, ethnic, demographic, and economic factors affecting the food production and service industry.

1E Summarize the roles and services of professional organizations serving the food production and service industry.

1F Predict changes in the food production and service industry for the future.

3A Contrast various ownership and management structures in the food production and service industry.

3B Describe various types of food production and service operations.

4A Describe types of establishments in commercial foodservice.

4D Distinguish types of restaurant ownership.

4E Describe services to segments of the institutional foodservice industry.

7G Use appropriate terminology related to the food production and service industry.

## Chapter Vocabulary

catering unit
central kitchen or commissaries
chain or multi-unit operation
commercial
conventional system
corporation
foodservice unit
franchise
home meal replacement (HMR)
in-plant feeding unit
institutional feeding unit
noncommercial
partnership
sole proprietorship

Foodservice is one of the largest industries in the United States. The foodservice industry is constantly changing and growing due to the impact of technology, economics, demographics, politics, and competition. ***Commercial*** foodservice includes fast-food, fine dining restaurants, convenience stores, and home meal replacement markets. The ***noncommercial*** foodservice establishments serve industry, medical facilities, military bases, educational institutions, and transportation service units.

Characteristics of commercial and noncommercial foodservice facilities are not totally separate. Commercial foodservice refers to food as the primary function of the establishment. Noncommercial foodservice refers to food as a secondary activity.

## THE FOODSERVICE INDUSTRY

The foodservice industry employs about nine million full-time and part-time workers. By the year 2005, 12.5 million workers will be employed by the foodservice industry. The foodservice industry is the single largest employer of young people in the nation as well as a major employer for females. More women and minorities hold jobs in management and supervision in foodservice than in most other industries.

### Factors Affecting The Food Production and Service Industry

Foodservice continues to be one of the nation's fastest growing industries. On average, Americans eat 45 percent of their meals away from home and at least one out of four meals is prepared outside the home. Americans spend the largest percent of their food dollars away from home. Annual sales of $376 billion are projected for the year 2000.

The more meals people eat away from home, the more foodservice job opportunities will be available. According to the U.S. Bureau of Labor Statistics, food and beverage service employees are expected to total 8.7 million people by the year 2005 — a 33 percent gain from 1990. A wide range of jobs are available beginning with entry-level positions that provide opportunities to move up through on-the job training or additional education.

Changes in American life have created an increased demand for foodservice. Our nation's prosperity has made it possible for most people to eat out. In periods of inflation, people still eat out, even though they may eat at less expensive restaurants. As more women are employed outside the home, adults have less time for food preparation at home. Emphasis on leisure activities has increased the demand for foodservice in vacation and resort areas and on airlines. As more people travel for business and pleasure, the need for foodservice in hotels and motels has increased. Longer life spans and improved health care have increased the need for foodservice in medical facilities. Refer to Figure 1.1 below for information that affects the foodservice industry.

In the 21st century, the foodservice labor market will continue to be affected by the diversity of the American labor force: increased numbers of older workers; 47 percent of American workers will be women of all ethnic backgrounds; increased employment

### Did You Know That in the Year 2005:

- eating and drinking places will account for the largest percentage of new jobs in retail trade, accounting for 42 percent of new retail jobs?
- foodservice is projected to be the second largest source of additional jobs in retailing representing 13 percent of the total growth?
- automotive dealers and service stations will account for 9 percent, and apparel stores and general merchandise stores will account for about 8 percent?
- the number of 16 to 19 year olds in the labor force will increase gradually to 8.8 million, a 33 percent gain from 1990?
- it is projected that the food and beverage industry will employ 4,278,000 waitpersons, 2,477,000 cooks and chefs, and 32,000 service workers?

⇨ ***Figure 1.1***

opportunities for individuals with disabilities; and increased numbers of African American, Asian, and Hispanic workers entering the workforce. The changing face of the American population also is reflected in the diversity of the foodservice customer. Many foodservice operations have added a variety of ethnic foods to their menus in order to meet the needs and preference of a very diverse customer market and also the food preferences of this country's many foreign visitors. In addressing issues nationwide related to a more diverse labor market and consumer population, many foodservice organizations and others in the hospitality industry have developed diversity awareness training programs to assist employees in providing access, inclusion, and opportunities for all individuals.

### ◆ Essential Questions: ◆ The Foodservice Industry

1. How have changes in American life increased the demand for foodservice?
2. How are employment opportunities affected by growth of the foodservice industry?
3. What changes in the labor market affect the foodservice industry?

## TYPES OF FOODSERVICE UNITS

A ***foodservice unit*** provides ready-to-eat food for customers, residents, employees, or patients. Units differ as to where the food is prepared and how it is served. The facility may offer a choice of only a few items or an extensive choice of menu items. Some foodservice units both prepare and serve food. Others are central kitchens that prepare food that is transported to another location for serving. Rather than prepare food, some foodservice units serve food that is prepared at another location or by a manufacturer.

Foodservice units also vary in whom they feed. A commercial restaurant, cafeteria, or fast-food establishment serve food to the general public. A restaurant is an establishment where meals are served and eaten. Cafeterias provide foodservice, allowing customers to choose food items served by foodservice employees. A fast-food establishment provides food that is prepared and served quickly. A ***catering unit*** usually serves food to guests at a special function, such as a wedding, party, or banquet. ***Central kitchens*** or ***commissaries*** prepare food to be served at a different location by schools, ships, airlines, businesses, or vending machines. ***Institutional feeding units*** serve students, patients, or residents in schools, hospitals, long-term care facilities, military bases, prisons, and Salvation Army and Red Cross facilities. ***In-plant feeding units*** provide foodservice for employees in businesses, factories, banks, and similar facilities where other types of foodservice are not readily available.

Food may be served to customers by a foodservice employee or selected by customers themselves. Seated-service units serve food to individuals seated at tables, booths, or sit-down counters. Institutions often utilize units serving patients or guests in their rooms. Self-service units allow customers to partially or completely serve themselves in a cafeteria line, at a buffet, at a takeout service, at a counter or window, or from a vending machine. A buffet offers many foods that are self-served. Takeout service allows a person to order by phone or in person and take the food home when it is ready. ***Home meal replacement (HMR)*** is a growing trend in the foodservice industry. HMRs or "dinner takeouts" are growing at a rate three times that of on-premises sales. In self-service units, little or no help is provided by foodservice personnel. Self-service and seated service may be combined. A restaurant may provide a self-service salad bar and seated service for the rest of the meal. Quick-service units are organized to provide fast service, usually from a limited menu. They may provide self-seated, or takeout service. Convenience stores providing food offer the public a convenient location to obtain quick service. Refer to Table 1.1 for an explanation of the various types of foodservice units. A foodservice unit that prepares most of their own food is referred to as a ***conventional system***. Traditionally, the conventional system prepares food items on the same premises they are served offering a more extensive menu.

### ◆ Essential Questions: ◆
### Types of Foodservice Units

1. How do foodservice units vary?
2. What is meant by home meal replacement (HMR)?
3. What are the functions of the following:
   - A catering unit?
   - A central kitchen or commissary?
   - An institutional feeding unit?
   - An in-plant feeding unit?

## OWNERSHIP AND MANAGEMENT STRUCTURES

Foodservice units vary in types of ownership. A unit may be one of the following types:

- ***Sole proprietorship*** refers to a business that is owned and operated by a single person.
- A ***partnership*** indicates that the business is owned by two or more persons.
- A ***corporation*** is a business owned by a group of people.

Two other terms commonly used when describing the ownership and operation of a foodservice unit are franchise and chain. A ***franchise*** is an agreement which assigns an individual, partnership, or corporation the right to use a name or formula in return for a fixed fee or a percentage of sales income. Professional assistance, such as site planning, construction plans, financial counseling, and

## Types of Foodservice

| Type of Foodservice | Menu Choice | Location of Service | Type of Service | Persons Served |
|---|---|---|---|---|
| Restaurant, seated service | Extensive | On-premises | Seated | General public |
| Restaurant, quick service | Limited | On-premises | Seated/counter/ takeout | General public |
| Restaurant, self-service | Extensive | On- or Off-premises | Trayline/limited seated | General public |
| Catering unit | Extensive (specificed for each function) | On- or Off-premises | Seated/buffet | Guests attending special function |
| Institutional feeding unit (child care, schools, hospitals, prisons, homes for older adults, congregate meals, military bases, Red Cross, Salvation Army) | Extensive or Limited | On- or Off-premises | Varies | Students, patients, inmates, employees, military personnel, vending machine users, homeless, victims of natural disasters |
| In-plant feeding unit | Limited | On- or Off-premises | Trayline/ vending/ counter/ seated service | Employees |

*Table 1.1*

national advertising may be provided as part of the agreement. A ***chain or multi-unit operation*** refers to several establishments with the same name or different names but the same ownership whether individual, partnership, or corporation. A corporation could contract or partner with another facility to manage the foodservice operation. For example, a foodservice company could contract with a hospital to manage the foodservice operation.

### ◆ Essential Questions: ◆
### Ownership and Management Structures

1. How do management and ownership of foodservice operations differ?
2. What might be the benefit of owning a franchise?

## ADVANTAGES AND DISADVANTAGES OF FOODSERVICE WORK

Foodservice careers, like most careers, have both advantages and disadvantages. Individuals interested in foodservice jobs should carefully consider the advantages and disadvantages of jobs in the foodservice industry.

### Advantages

The following are advantages of foodservice careers:

- *Many types of foodservice jobs are available.* A foodservice worker may work in a fast-food restaurant, a family restaurant, a gourmet restaurant, a school lunchroom, a hospital dietary department, a commercial cafeteria, a catering unit, or a company that provides food for schools, hospitals, airlines, or vending machines. Jobs range from entry-level to management-level. Educational requirements range from no diploma required to a high-school diploma to completion of trade school to the requirement of a college degree.
- *Salaries and fringe benefits are similar to other industries.* Pay varies depending on job level. Benefits may include paid vacations, bonuses, pension plans, hospital and group insurance, and profit sharing. Meals and uniforms are often furnished.
- *Part-time jobs and flexible schedules are available.* Typical working hours vary from 40-48 hours a week. Short hours, broken shifts, early and late shifts can be arranged.
- *Foodservice workers are in demand.* Jobs for foodservice workers are constantly available in many communities and the work is steady. The foodservice industry is growing throughout the country.
- *Working atmosphere is usually pleasant.* Foodservice units are often modern and attractive.
- *Opportunities for advancement exist.* Entry-level employees can advance to higher-level positions through on-the-job training or additional education. Many companies provide their own training. Job advancement is often rapid.
- *Management and ownership opportunities exist for ambitious persons.* Management and franchise opportunities are available to experienced persons. Ownership requires an investment of money and a willingness to work hard.

### Disadvantages

Frequently mentioned disadvantages of careers in the foodservice industry include the following:

- *Work hours may be inconvenient.* Foodservice workers frequently work at night and on weekends and holidays.

- *Work is often done under pressure.* During peak serving periods a fast pace is necessary. Customers may contribute to work pressure if they are demanding and irritable.
- *The work is strenuous.* Some foodservice workers must carry heavy trays and pots and pans. Fatigue may be increased by hard floors, hot kitchens, and limited space. Time pressure also causes fatigue.
- *Low pay for entry-level positions is common.* For entry-level jobs, usually only minimum wage is paid. In some positions, tips increase basic wages.

◆ **Essential Questions:** ◆
**Advantages and Disadvantages of Foodservice Work**

1. What are five advantages of foodservice careers?
2. What are three disadvantages of foodservice careers?

## FUTURE OUTLOOK OF THE FOODSERVICE INDUSTRY

The foodservice industry is in a constant state of change. Economics, technology, demographics, politics, and competition impact the future of the foodservice industry. In 1999, foodservice industry sales were more than $1 billion per day. In the past, eating has been divided between meals prepared at home and meals away from home prepared by foodservice establishments. The two areas are no longer completely separate due to the increased number of takeout meals and the decreased number of meals being prepared at home.

More and more foodservice operators will be expected to provide high quality meals at a reasonable price. Distributors and manufacturers will need to provide more convenience items. Further development is needed in the packaging and presentation of these items to the customer. Trends in development are needed in the packaging and presentation of these items to the customer. Trends in foodservice include continued growth of franchising, convenience stores, and home meal replacement (HMR). Upscale casual dining establishments offering fresher and varied ingredients is predicted in sales. The following predictions have been published by the National Restaurant Association (NRA):

- Menu prices are projected to increase at a rate of 2.8 percent in 2000, up from a 2.6 percent gain in 1999. Menu-price inflation is expected to remain above the nation's overall inflation rate for the fourth consecutive year.
- Within the Commercial Restaurant Services Group, sales at full-service restaurants are projected to total $128.1 billion – a 5.9 percent increase over 1999. Sales at quick-service (fast-food) restaurants are expected to reach $114.7 billion, which represents a 4.4 percent gain over 1999.
- The Southwest/Mountain region is projected to register eating-place-sales growth of 6.23 percent in 2000, the highest in the nation, led by strong performances in Nevada, which is up 7.7 percent; Arizona up 6.6 percent; and Utah, up 6.4 percent. The region also has top performances by Colorado and Texas, both up 6.1 percent.
- The only other states joining the magic circle above 6 percent are Georgia at 6.5 percent and California at 6.2 percent.

Table 1.2 shows the NRA 2000 Regional Forecast for commercial foodservice sales. Refer to Figure 1.2 for Restaurant Industry Facts.

◆ **Essential Questions:** ◆
**Future Outlook of the Foodservice Industry**

1. What demands will be placed on foodservice operations in the future?
2. What trends are related to future growth of the foodservice industry?

**2000 Regional Forecast**

| | Eating-place sales 1999 ($000) | Eating-place sales 2000 ($000) | % change |
|---|---|---|---|
| Southwest/Mountain | $41,780,390 | $44,382,214 | 6.23% |
| West | $42,204,990 | $44,666,456 | 5.86% |
| Southeast | $69,467,348 | $73,331,067 | 5.56% |
| Midwest | $65,502,296 | $66,516,250 | 4.60% |
| New England | $12,118,055 | $12,618,347 | 4.13% |
| Mid-Atlantic | $37,678,829 | $39,105,664 | 3.79% |

*Table 1.2*

## PROFESSIONAL ORGANIZATIONS SERVING THE FOODSERVICE INDUSTRY

Several professional organizations provide a variety of services and resources to the food production and service industry. Education and other opportunities are available to promote lifelong learning. These include the following:

- American Dietetic Association (ADA)
  www.eatright.org/
  216 W. Jackson Boulevard
  Chicago, IL 60606-6995

- American School Foodservice Association (ASFSA)
  www.asfsa.org/
  1600 Duke Street
  Alexandria, VA 22314

- American Society for Healthcare Foodservice Administrators (ASHFSA)
  www.ashfsa.org/
  American Hospital Association
  1 North Franklin
  Chicago, IL 60606

- Dietitians of Canada (CDA)
  www.dietitians.ca/
  #604-480 University Avenue
  Toronto, Ontario M5G1V2

- National Association of College and University Foodservices (NACUFS)
  www.nacufs.org/
  1405 South Harrison Rd
  Suite 305, Manly Miles Building
  Michigan State University
  East Lansing, MI 48824

- The National Restaurant Association (NRA)
  www.restaurant.org/
  150 N Michigan Ave.
  Suite 2000
  Chicago, IL 60601

- Society for Healthcare Foodservice Management (HFM)
  www.hfm.org/
  204 East Street NE
  Washington, DC 20002

## Restaurant Industry Facts

| | |
|---|---|
| Sales | $376 billion |
| Locations | 831,000 |
| Employees | 11 million |
| Restaurant-Industry Share of the Food Dollar | 45.3 percent |

---

- On a typical day in 2000, the restaurant industry will post average sales in excess of $1 billion.
- The restaurant industry provides work for more than 8 percent of those employed in the United States.
- Restaurant industry sales are forecast to advance 5 percent in 2000 and equal 4 percent of the U.S. gross domestic product.
- The average annual household expenditure for food away from home in 1997 was $1,921 or $768 per person.
- In 2000, the restaurant industry's food and beverage purchases should exceed $130 billion.
- Travelers and visitors account for half of sales at table service restaurants with average checks of $25 or more.
- With direct sales of more than $376 billion, the overall economic impact of the restaurant industry is expected to reach $785 billion in 2000. This includes sales in related industries, such as agriculture, transportation, wholesale trade, and food manufacturing.
- The restaurant industry employs 11 million people, making it the nation's largest employer outside of government.
- Total annual wages and benefits equal $39 billion for full-service restaurants and $35 billion for limited-service (fast-food) establishments.
- Almost six out of 10 employees in foodservice occupations (58 percent) are women, 12 percent are African-American, and 17 percent are of Hispanic origin.
- Nine out of 10 salaried employees at table service restaurants started as hourly employees.
- Eating and drinking places employ more minority managers than any other industry.
- The number of African-American owned and women owned eating and drinking place firms increased at double-digit rated over the past decrease with scales also rising dramatically.
- Restaurant operators report that finding qualified/motivated labor will be their biggest challenge in 2000.
- Restaurant industry 2010 projections:
  - $577 billion in restaurant-industry sales
  - More than 1 million units
  - 53 percent of the food dollar will be spent away from home

Source: National Restaurant Association.

*Figure 1.2*

## Chapter Highlights

- Foodservice is one of the nation's largest and fastest growing industries.

- Changes in American life continue to increase the demand for foodservice.

- Types of establishments in commercial foodservice include restaurants, cafeterias, fast-food establishments, catering units, central kitchens, institutional units, and in-plant feeding units.

- Foodservice units vary in several ways:
    - number of menu choices provided
    - where the food is prepared and served
    - how the food is served
    - who is fed
    - type of ownership

- Convenience stores that sell a variety of food items offer the public quick foodservice items at convenient locations.

- Home meal replacements (HMR) or "dinner takeouts" are growing at a rate three times that of on-premises sales.

- Trends in foodservice include continued growth of franchising, convenience stores, and home meal replacements (HMR).

# Chapter 2

## Careers in Foodservice

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

13A Determine preparation requirements for various levels of employment in a variety of food production, management, and services careers.

13B Analyze the future employment outlook in food production, management, and services.

13C Describe entrepreneurial opportunities in food production, management, and services.

14B Exhibit ethical practices as defined by the food production and service industry.

### Chapter Vocabulary

- back-of-the-house
- control jobs
- dietetic technician
- entry-level jobs
- ethics
- executive chef
- front-of-the-house
- management jobs
- middle management
- production jobs
- professionalism
- registered dietitian
- service jobs
- sous chef
- support jobs

A foodservice career can be developed in any type foodservice operation and may take a variety of directions. Foodservice jobs may be found in restaurants, fast-food establishments, cafeterias, catering establishments, or institutions. Job descriptions may be found in the *Dictionary of Occupational Titles* and the *Occupational Outlook Handbook*. However, despite the variety of foodservice establishments, there are many similarities in the jobs. The career ladder in the foodservice industry is quite extensive with many varied jobs available at each level. The term "career ladder" is used to describe the levels of employment opportunities in business and industry beginning with entry-level positions and progressing to high-level management positions.

## CAREER OPPORTUNITIES IN FOODSERVICE

The type of foodservice operation influences the number of foodservice staff needed and their duties and responsibilities. Three factors that influence the staff needed include the following:

1. **The size of operation:** This refers to the number of customers and the number of meals served which influence the size of staff needed in both the front-of-the-house and the back-of-the-house.
2. **The menu:** This refers to the number of items on the menu and how they are prepared. This affects the number of employees needed and their duties and responsibilities. The menu also determines the skills needed by food preparation employees.
3. **The form of service:** Form of service refers to the type and quality of service which varies from simple counter service to elaborate table service. The form of service affects the number and type of employees needed and the tasks assigned to those employees.

In general, foodservice jobs are located either in the back-of-the-house or in the front-of-the-house. Different types of foodservice jobs are available in each area.

### Front-Of-The-House

The ***front-of-the-house*** is the area seen by guests. This is the area where food is sold, served, and consumed. In most foodservice establishments, it includes the reception area, dining rooms, and restrooms. In some units, the front-of-the-house operations are handled by vending machines, automats, or takeout service. In institutional foodservice units, the front-of-the-house operations vary. For example, cart and tray service is used in most hospitals. Cafeteria or counter service is used in most schools.

Front-of-the-house jobs include those in service and management. These jobs include the following:

- ***service jobs*** – set-up personnel, dining room attendant, waitperson, cocktail server, dining room captain, bartender, cashier, and host/hostess

- ***management jobs*** – dining room manager, maitre d'hotel, banquet manager, food and beverage manager, food and beverage controller, wine steward, and executive chef

### Back-Of-The-House

The ***back-of-the-house*** is the area of the establishment not usually seen by customers. This is the area where food is received, stored, and prepared. It includes the kitchen, pantry, storerooms, and dishwashing area. Back-of-the-house jobs may be divided into three types: support, production, and control. Jobs in these areas include the following:

- ***support jobs*** – silver polisher, porter, sanitation supervisor, steward, and dishwasher
- ***production jobs*** – vegetable preparer, meat cutter, pantry worker, cook, baker, and chef
- ***control jobs*** – food runner, receiving room attendant, storeroom attendant, storeroom supervisor, food checker, and purchasing steward

## The Outlook of Foodservice Careers

The National Restaurant Association (NRA) predicts both industry sales and job growth to remain strong. There is a critical need for unit level managers in the foodservice industry. To reduce turnover, managers will need to be paid more along with greater benefits. More women are holding management positions as well. There is a need for better training and increased pay for entry level foodservice employees.

### ◆ Essential Questions: ◆
### Career Opportunities in Foodservice

1. What are the differences between front-of-the-house and back-of-the-house jobs in foodservice organizations?
2. What are some critical employment needs in the foodservice industry?
3. Where are some sources of information and job descriptions for jobs in the food production and service industry?

## CATEGORIES OF FOODSERVICE CAREERS

The duties and responsibilities assigned to an employee influence the amount of experience, training, and/or education required. However, especially in small foodservice units, employees are assigned duties and responsibilities that overlap job levels. In general, foodservice jobs can be classified as unskilled, semi- killed, skilled, or supervisor and management. Some related opportunities are also available.

### Unskilled Jobs

Unskilled jobs in foodservice require the lowest level of job responsibility and provide the lowest level of pay. There are no specific educational requirements for unskilled jobs. These jobs usually require physical strength for tasks, such as lifting, running, and mopping. Unskilled jobs can be learned in a few days on the job. They provide limited opportunities for advancement. Examples of unskilled jobs in foodservice include the following:

**Back-of-the-House**
- Kitchen helper
- Coffee maker
- Baker helper
- Dishwasher
- Storeroom assistant

**Front-of-the-House**
- Dining room attendant
- Cafeteria counter attendant
- Bus person

### Semi-skilled Jobs

The second step on the foodservice career ladder is semi-skilled jobs. These jobs require more responsibility and offer more pay than unskilled jobs. Skills for semi-skilled jobs may be learned on the job or in training programs in high school or at a community college. A combination of both experience and education is preferable. Examples of semi-skilled foodservice jobs include the following:

**Back-of-the-House**
- Cook helper
- Cook, specialty
- Cook, head
- Assembler
- Kitchen clerk
- Pantry worker
- Sandwich maker
- Dietetic assistant

**Front-of-the-House**
- Waitperson, informal
- Waitperson, formal
- Waitperson, outside food delivery
- Waitperson, room service
- Waitperson, takeout
- Bartender

- Food tabulator
- Cashier

Unskilled and semi-skilled jobs are sometimes called ***entry-level jobs***. Entry-level jobs require little or no training or specialized education.

## Skilled Jobs

Greater artistic freedom and more responsibility are available for skilled jobs in foodservice. Skilled jobs pay well and usually require professional training. Examples of skilled foodservice jobs include the following:

**Back-of-the-House**

- **Chef**. The ***executive chef*** is trained as a cook and as a manager. ***Sous chef*** is one level below the executive chef and assists cooks in each section and fills in for the executive chef. Each station has a specialty chef.
- **Dietetic technician**. A ***dietetic technician*** has completed a two-year associate degree program approved by the American Dietetic Association.

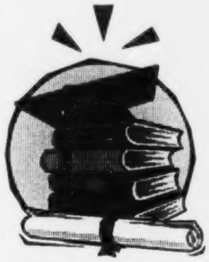
**Front-of-the-House**

- Waitperson, head
- Host/hostess

## Supervision and Management Jobs

Jobs in supervision and management are at the top of the foodservice career ladder. Supervision and management jobs may be described at three levels – supervision, middle management, and top management.

**Supervision.** Supervision deals with overseeing daily operations and implementing decisions made at a higher level. A supervisor is the specific person responsible for overseeing daily operations. This job may require graduation from a one-year or two-year community college training program. A position as a ***registered dietitian*** requires completion of a four-year degree plan plus internship and a qualifying exam through the American Dietetic Association. Supervisors are usually in demand and their pay is competitive with that in other industries. Supervisors usually work a standard work week and most are paid on an hourly basis. Generally, work hours are the same as those of the production staff and often include evenings, weekends, and holidays. A supervisor can earn overtime pay for extra hours as is true of other positions. Supervisory positions usually require that uniforms be worn.



Duties of a supervisor involve constantly monitoring production and service. The supervisor performs whatever routine tasks are essential to successful operation. Duties include scheduling and training employees and ensuring quality service. Examples of supervisory positions in foodservice include the following:

**Back-of-the-House**

- Dietitian
- Therapeutic dietitian
- Foodservice supervisor
- Kitchen steward

- Kitchen supervisor
- Steward
- Banquet steward

**Front-of-the-House**
- Host/hostess, restaurant or coffee shop
- Maitre d'hotel

**Middle Management.** Middle management is responsible for implementing policy and making routine operational decisions. ***Middle management*** positions, often referred to as mid-management, require a combination of ability and training. A workweek of sixty to seventy hours is fairly common. A manager's work schedule almost always includes weekends and holidays. Managers are paid a weekly or monthly salary. A manager usually has an office, but typically spends only a small amount of time there. Examples of foodservice mid-management positions include the following:

- Director, food and beverage
- Manager, catering
- Manager, cafeteria or lunchroom
- Manager, restaurant or coffee shop
- Manager, traveling
- Manager, trainee

**Top Management.** Top management is primarily concerned with making finance and policy decisions. Top management positions do not always require a foodservice background, although it is preferable. A top-level foodservice manager usually holds a bachelor's degree in management, business administration, or a related field. The foodservice manager may be a graduate of a school or college teaching hotel, restaurant, and institutional management. Top management positions offer high pay and require work experience at lower levels of management. Top management positions usually do not have set hours and may require travel.

### Entrepreneurial Opportunities

Self-operated foodservices which are independently owned offer an opportunity for the entrepreneur in food production and service. Self-operated foodservices often need to develop their own menus, procedures, and tools. It is important to incorporate trends in the foodservice industry.

### Related Opportunities

In addition to jobs directly involved in food production, management, and service, a variety of related opportunities might be considered. Related job opportunities are available with food processors (manufacturers), food suppliers (purveyors), foodservice equipment manufacturers, advertising agencies, and consulting and management companies. These opportunities might involve food processing, equipment design, packaging, sales, advertising, consulting, or management.

**◆ Essential Questions: ◆**
**Categories of Foodservice Careers**

1. What is the difference in back-of-the-house and front-of-the-house jobs?
2. What types of supervision and management jobs are found in foodservice organizations?

## EXPERIENCE, EDUCATION, AND TRAINING FOR CAREERS IN FOOD PRODUCTION, MANAGEMENT, AND SERVICES

In addition to the education and experiences already mentioned, there are specific personal characteristics, knowledge, and skills needed in foodservice careers. All foodservice jobs require an abundance of energy. Most also require knowledge of food and food preparation. General skills needed include human relations skills, math skills, and communication skills. Top management positions require conceptual skills which include understanding and integrating all activities toward the objectives of the organization.

Human relations skills are needed by all foodservice employees to work effectively as members of the foodservice team. Front-of-the-house employees also need skills in dealing effectively with customers. These employees need good judgment and self-control.

Foodservice employees need math skills. Cooks use math skills in reading and adjusting recipes. Wait staff, cashiers, hosts, and hostesses use math skills in tabulating customer checks and operating a cash register and computer. Foodservice managers use math skills in budgeting, recordkeeping, figuring payrolls, and pricing menu items.

Communication skills are also needed by most foodservice employees. These skills include reading, writing, verbal, and nonverbal communication. Communication skills are used in reading recipes, writing orders, and communicating with co-workers and customers. Multilingual employees are in much demand.

## Ethics and Professionalism

A good foodservice worker should follow a code of behaviors and attitudes referred to as ***professionalism***. Qualities of professionalism include a positive attitude toward the job; a willingness to work hard; an ability to work well with others; an eagerness to learn; and a dedication to quality.

***Ethics*** is described as the moral conduct that is expected of all persons working within a profession. It includes the knowledge and practice of right and wrong, confidentiality, and moral behavior. Ethical behavior involves honesty, integrity, and respect for self and others. Examples of ethical violations in the food preparation and service industry include the following:

- failure to follow food safety and sanitation procedures, thus risking the health and well-being of customers and employees.
- purposely overcharging, undercharging, or misrepresenting charges to customers in person or in writing.
- irresponsible behavior in regard to safety of employees and customers.
- dishonesty in reporting income, including gratuities.
- misrepresentation of education, training, or work experience on resumés, job applications, or in pursuit of a promotion.

Many professional organizations and associations have professional codes of ethics which detail specific policies, procedures, and practices which are considered "non-negotiable" for individuals working within that profession. Often severe penalties are imposed on individuals who violate the association's codes of ethics, such as revoking licenses or certifications and reporting violations to employers. It is important to develop and internalize a workplace or professional code of ethics in order to function effectively and fairly in food production and service careers.

### ◆ *Essential Questions:* ◆
### *Experience, Education, and Training for Careers in Food Production, Management, and Services*

1. What skills are needed for careers in the food production and service industry?
2. How are math skills used in foodservice occupations?
3. Why are ethics important in food production and service occupations?

## Chapter Highlights

- The career ladder in the foodservice industry is quite extensive with many varied jobs available at each level.
- The term "career ladder" is used to describe the levels of employment opportunities in business and industry beginning with entry-level positions and progressing to high-level management positions.
- Three factors that influence the staff needed for foodservice operations include the size of the operation, the menu, and the form of service.
- The two main areas of a foodservice establishment are the front-of-the-house and the back-of-the-house.
- Foodservice operations employ unskilled, semi-skilled, skilled, and supervisory/management personnel. Unskilled and semi-skilled jobs also are called entry-level jobs. Entrepreneurial and related job opportunities are also available to individuals interested in foodservice careers.
- Foodservice jobs require human relations skills, math skills, and communication skills. Jobs in foodservice require abundant energy and teamwork.
- Ethics is described as the moral conduct that is expected of all persons working within a profession. It includes the knowledge and practice of right and wrong, confidentiality, and moral behavior.

# Chapter 3

## Providing Quality Service

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

- 10A Describe roles and responsibilities in foodservice operations.
- 10B Analyze personal qualities and skills required of foodservice employees.
- 10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.
- 10E Perform appropriate tasks in foodservice according to industry standards.
- 11B Compare various ways of building and maintaining client-based services.
- 11D Apply techniques that promote customer service and satisfaction.
- 11F Demonstrate friendly customer service.
- 11G Evaluate criteria affecting quality service.
- 12A Demonstrate effective verbal, nonverbal, written, and electronic communication skills.
- 12C Demonstrate positive interpersonal skills including conflict resolution, negotiation, teamwork, and leadership.
- 12D Evaluate the relationship of good physical and mental health to job success and achievement.
- 12E Demonstrate appropriate grooming and appearance for the workplace.
- 12F Demonstrate appropriate business and personal etiquette in the workplace.
- 12G Exhibit productive work habits and attitudes.

### Chapter Vocabulary

a la carte
attitude
club breakfasts
expediter
gratuities
human relations
nonverbal communication
personality
selling up
suggestive selling
table d' hote
total quality service

Service personnel are responsible for dealing directly with the customer. They greet and seat customers, sell and serve food, receive money for sales, make accurate change, and keep records of sales.

Service personnel must interact effectively with customers. They must develop personal skills for dealing with customers, develop an understanding of customers, develop merchandising skills, and develop the ability to manage varied serving responsibilities to ensure customer satisfaction.

## PERSONAL SKILLS FOR FOODSERVICE OCCUPATIONS

A pleasing personal appearance, a pleasant personality, and a positive attitude are personal skills needed for occupations in the foodservice industry. Foodservice personnel must also be able to communicate effectively and develop positive human relations.

### Personal Appearance

Appearance is the first thing customers evaluate about service personnel. Good grooming is essential. The following grooming practices are essential for foodservice personnel and important habits for all individuals working in service occupations to develop:

- ***Hair*** should be clean, an acceptable length according to company policy, attractively styled, pulled back off the shoulders and constrained in a net or hat.
- ***Facial hair*** should meet the company or management requirements. Foodservice personnel usually are expected to be clean shaven, and the skin should be clean and clear.
- ***Makeup*** should be tastefully applied; a minimum amount of makeup is preferable.
- ***Teeth*** should be clean and breath should be odor-free.
- ***Deodorant*** should be used to guard against body odors, and strong perfumes and colognes should be avoided.
- ***Hands*** should be clean and unstained.
- ***Fingernails*** should be clean, short, neatly manicured, and unpainted.
- ***Posture*** should be erect and posed.
- ***Multiple earrings, nose rings, etc.*** (other than one earring in the lower ear lobes) are prohibited in many foodservice establishments.

Appearance includes both grooming and dress. The way you package yourself says a lot about you. Your appearance tells others how you think of yourself and what you think of them. People enjoy being around neat, well-groomed persons and tend to perceive them as competent and conscientious. Appearance provides the basis for first impressions.

Service personnel must avoid offensive personal habits. Smoking, chewing gum, touching facial blemishes, combing hair, treating cuts, or rubbing bruises should not be done in the presence of guests. Not only are these practices offensive, but they are unsanitary as well.

Most establishments require service personnel to wear uniforms. Some ask service personnel to wear personal clothing of a certain type, such as black slacks or skirt and a white shirt. More formal operations may require clothing resembling evening-wear. Uniforms should be properly fitted, in good repair, freshly laundered, and well-pressed. Shoes should be polished, slip resistant, clean,

and comfortable. Hosiery should coordinate with attire and provide proper leg support. Jewelry should be conservative and limited according to the establishment's regulations. Jewelry usually is limited to pierced earring studs and a plain wedding band.

## Personality and Attitude

Service personnel should be friendly, pleasant, courteous, enthusiastic, flexible, and likeable. These attributes contribute to a pleasing personality. ***Personality*** refers to the way a person appears and behaves toward others. Personality is reflected by appearance, actions, and attitudes. These factors influence the way people affect each other.

The importance of a neat, well-groomed appearance has already been discussed, but actions also need to be monitored. Often actions tell more about people than the words that they speak. A cheerful, alert expression indicates intelligence and a desire to be helpful; a friendly smile indicates interest in others; looking others in the eye indicates that complete attention is being given; prompt service indicates to guests that they are important; an erect, well balanced, controlled posture creates the impression of a confident, healthy person; speaking clearly with warmth and enthusiasm communicates to others that they are important and cared about; and using words like you, your, we, and our indicate concern with other people's needs. On the other hand, mannerisms like throat clearing, hair twiddling, head scratching, finger snapping, or humming may make employees seem nervous, unsure, and rude. Seeing employees practice such mannerisms only promotes the negative impressions such employees impart on guests.

***Attitude*** reflects general outlook on life. It is the way one characteristically reacts to people, things, and events. If an individual person sees others as warm, friendly, lively, and helpful; enjoys being with them; and wants to help them, that individual has a positive attitude toward people. If an individual sees others as cold, unfriendly, dull, and lazy; dislikes being with them; and has no desire to help them, that individual has a negative attitude toward people.

Service personnel need to exhibit positive attitudes. They will relate more effectively to guests if they appear to like other people and enjoy their work, exhibit confidence in their own abilities, learn to solve problems efficiently, and remain open to acquiring new skills for the sake of self-improvement.

## Communication Skills

Service personnel communicate by speaking, listening, writing, and using nonverbal communication. Each of these skills can be developed to improve the quality of communication.

Voice, in addition to appearance, reveals much about a person's attitude. Voice tones, for example, can reflect enthusiasm, concern, doubt, or nervousness. Tone of voice can convey an impression that is exactly the opposite of actual spoken words. For example, it is possible to ask "May I help you?" in such a way that the real message is "What are you doing here?"

**Speaking.** Service personnel should strive for the following voice qualities:

- **Alertness and vitality**–voice strength should exhibit interest in the other person and an eagerness to serve.
- **Sincerity**–voice should impress upon others the qualities of honesty and truthfulness without undue emotion.

- **Distinctness**–voice should be sound, clear, and assertive. Listeners should be addressed directly.
- **Pleasantness**–voice should be appealing, non-threatening, and easy to listen to.
- **Expressiveness**–voice tone should vary in order to properly express and add meaning to what is being said.

**Listening.** Poor listening is a major barrier to the communication process. One reason poor listening occurs is that people have the ability to listen and process spoken information faster than a speaker can talk. This can cause listeners to think ahead of speakers or to become distracted. Another barrier to the communication process is mentally tuning out speakers. Disinterest in the subject matter or a poor attitude on behalf of the listener can cause one to tune out a speaker.

Service personnel need good listening skills. Here are some pointers for becoming a better listener:

- **Be an active listener**–listen for main ideas and facts. Concentrate on what the other person is saying by controlling tendencies toward mind wandering. Repeat the information to the person to check that understanding of information was accurately interpreted.
- **Maintain eye contact**–this helps a listener to concentrate on what a speaker is saying and also demonstrates a listener's concern about what a person says.
- **Do not be distracted by others** –besides looking at the person who is speaking, listeners can move closer, or politely ask the speaker to talk a little louder.

**Written Communication.** Service personnel also need written communication skills. Duties may include writing food and beverage orders, totaling guest checks, and figuring sales tax. Clear handwriting and accurate arithmetic convey a professional image. Service personnel with poor handwriting or poor math skills should practice to improve these important skills related to communication.

**Nonverbal Communication.** Facial expressions, posture, gestures, and body movements add meaning to what is said; these are forms of ***nonverbal communication***. Nonverbal communication adds meaning to spoken words. These nonverbal cues help foodservice personnel fully interpret what guests are trying to communicate. Employees also use nonverbal cues to add meaning to what they are communicating to guests. Smiling shows friendliness, leaning forward shows interest, and walking purposefully shows work efficiency.

## *Human Relations*

***Human relations*** is concerned with how effectively people deal with one another. In the foodservice business, the degree of teamwork among service personnel and between service and kitchen personnel indicates the quality of human relations at that facility. Human relations affect productivity, creativity, morale, and, ultimately, the success of the business. Human relations also affect the way service personnel deal with customers.

Foodservice personnel can develop good human relations with co-workers and customers by following these guidelines:

- Delay forming impressions as long as possible. Snap judgments are often inaccurate. Because human beings are complex, much information is necessary in order to form accurate opinions about a person. Always assume that each guest is a special and important guest–worthy of the best service the establishment has to offer.
- Try to see the other person's point of view. There is a natural tendency to look at others from personal points of view. It is best to learn about others by listening to

them and observing their actions and reactions.

- Be courteous and considerate. Treat others with consideration and respect. Use of words, such as "please" and "thank you," spoken sincerely will inspire guests to form positive opinions about employees.
- Try to identify and respond to the sensitivities of others. Address individuals by name.
- Avoid mentioning an individual's age or weight.
- Avoid embarrassing others.
- Be a good listener.
- Be cheerful and enthusiastic.
- Do more than is expected.
- Do not gossip, complain, or find fault.
- Try to be as agreeable as possible.
- Be yourself.

## Teamwork

Food establishment personnel must function as a team. A spirit of cooperation is essential to ensure satisfied customers and increased profits. Considerate service personnel avoid inadvertently interfering with their co-workers movements. They receive and pick up their orders in turn, are tolerant and helpful, do their part to keep service stands neat and clean, and help one another when needed.

Despite the need for cooperation, conflict sometimes occurs. Common areas of conflict involve order pick up, cleanliness, and ***gratuities*** (tips). Waitpersons sometimes accuse others of picking up their orders in the kitchen. Use of duplicate checks, with one turned into the kitchen and one kept by the server, can minimize this problem. Another solution is to employ or delegate one employee as an ***expediter*** (a kitchen traffic cop) to control ordering and pick up.

Disagreements result when some service personnel do less than their share of the work. Each worker must accept responsibility for helping stock and clean service areas. Each employee must be willing to return dirty dishes to the kitchen as necessary.

When one waitperson consistently earns more than any other, dividing tips fairly becomes a problem. Several methods may be used to divide tips, one of which is to divide all tips equally among service personnel including bus persons. The share for bus persons may be determined by placing the number of bus persons over the number of waitpersons and using the fraction to determine the amount each bus person will receive. Another method of dividing tips is to have each waitperson, or work station give 10 to 40 percent of its tips to the bus person serving the area.

Belief that someone is taking another person's gratuities causes hard feelings among service personnel. Wearing uniforms without pockets or pooling tips in a locked box are possible solutions. Definite station assignments can also minimize the problem. The best solution is honesty by all service personnel.

Most problems with kitchen personnel result from poor communication. Such problems can be avoided by using a system for placing and picking up orders. Any complaints about the kitchen staff should be made to the person in charge of the dining room.

During serving hours, service personnel should concentrate on serving guests. Personal discussions with co-workers concerning social life should be prohibited. If a disagreement with a co-worker develops, it should be handled quietly in the kitchen, or, better still, dealt with after serving hours.

### ◆ Essential Questions: ◆ Personal Skills for Foodservice Occupations

1. Why is the appearance of service personnel important to the success of a foodservice operation?
2. In what three ways is the personality of a foodservice worker reflected?
3. What are the differences in positive and negative attitudes?
4. What are three important listening skills?
5. Why is teamwork important to the success of a foodservice operation?

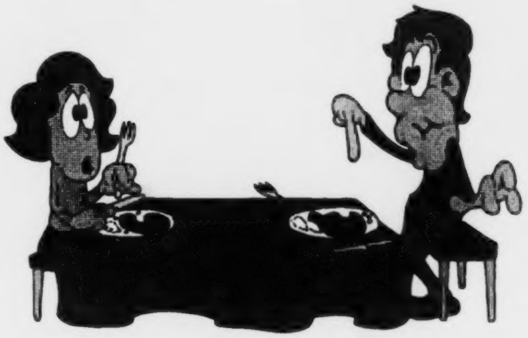
## CUSTOMER RELATIONS

Understanding customers is an important attribute for service personnel. Anticipating customer expectations, pleasing customers, and handling customer complaints effectively are important skills to develop.

### Types of Customers

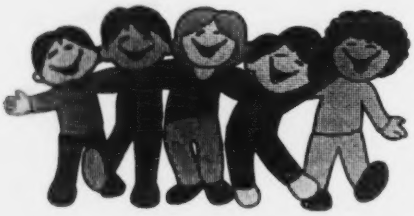
Foodservice workers need certain interpersonal relations skills for handling guests with special needs. The following are examples of guest types:

- **Rushed guest:** If service can be given more quickly in another area of the restaurant (at a counter, for example), ask these customers if they would like to be seated in that area. If these customers refuse, explain accurately and briefly how long their order might take. Suggest menu items that are already prepared. Provide beverages and salads immediately. Offer to bring dessert with the main course. Suggest takeout orders if available. Provide check as quickly as possible.
- **Indecisive guest:** Make suggestions and do not rush customers. If customers take too much time, employees should excuse themselves and promise to return soon. Avoid appearances of irritation and do not make indecisive customers feel guilty about causing delays.
- **Dieting guest:** Know menu items appropriate for common dietary restrictions. Know or be willing to find out, ingredients and methods used to prepare food items. For example, suggest low-fat items that are baked instead of fried, or low salt items without added table salt. Know the establishment's policy regarding special requests or menu substitutions. Make appropriate suggestions when requested.
- **Noisy guest:** Noisy guests often disturb other guests. Seat noisy guests away from others if possible. If the noise becomes a real problem, ask the head waitperson or the manager to intervene.
- **Angry guest:** Listen to the guest's complaints, express regret at the guest's displeasure, and attempt to make amends. Stay cool and calm, answer questions with care, and do not reason with the guest. If a spill has occurred, clean the table with a service towel, place a clean napkin over the spot, and bring another serving of the spilled item. If the spill is on the floor, place a chair over the spot to prevent falls, call the appropriate person to clean the area, and offer to seat the guest at another table. If



necessary call the head waitperson or the manager.

- **Complaining guest:** If the item the customer came in for is not on the menu say, "I'm sorry that you have been disappointed; may I suggest something else?" If the main dish is not prepared to the customer's satisfaction, exchange it without a fuss. Do not appear annoyed, upset, or in a hurry. Listen carefully, and report any complaints you cannot handle to the manager or other designated person.
- **Joking or overfamiliar guest:** Be courteous, but dignified with this undignified individual. Avoid getting involved in long conversations. Ignore comments if possible. Try to be good-natured about "kidding." Avoid going near the table except to provide needed services. If the individual gets "out of line" report the situation to the manager. Avoid making a scene.
- **Intoxicated guest:** Alert the head waitperson or manager when an intoxicated guest is present. Do not attempt to handle the drunk or drugged individual alone.
- **Young guest:** Children can be delightful guests or big problems. Much can be done to make their visit pleasant and the job of the employee in charge easier. Provide a table away from heavy traffic areas. To help prevent distractions, try to seat children at a table where they are unable to see other guests. Provide a high chair as quickly as possible. Ask parents if they need a baby's bottle warmed in the microwave oven or in hot water, or if they want crackers or a cookie to give the child until their food arrives. Do not ask small children what they want to order unless a parent requests that the child be allowed to do so. Know the establishment's policy on splitting adult portions and on children's menu items. Quietly move dangerous objects out of reach of young children. Be friendly, but do not play with or tease the child. Provide extra napkins during the meal and a warm, wet cloth at the end of the meal.



- **Older guest:** Older adults may appreciate a table away from, but not isolated from, the noisy areas of the dining room. Assist the guest in selecting menu items to fit dietary needs. If policies permit, offer larger portions of another item if one must be skipped for dietary reasons. Remember to offer salt substitutes and artificial sweetener.

- **Guest with visual impairment:** Employees should offer their left arm to customers who are visually impaired in order to help lead them to a table. The cane or guide dog belonging to the visually impaired person should not be touched. Remove unnecessary clutter from the table and move condiments closer to the guest. Offer a menu to the visually impaired guest and if the menu is not desired, ask for food preferences. Describe menu items which might interest the guest and give the price of each item. For example, "We have a 10 oz. sirloin for $12.95." Speak in a pleasant voice at normal volume. Note any special request, such as boning meat or buttering bread. While serving the ordered food, announce what you are putting on the table. Employees may want to mention where on the plate the main course is located by saying for example, "The steak is on your plate at 6:00." When presenting the check, read the items ordered aloud and give the total.

- **Guests with physical disability:** Some physically disabled guests may require assistance. Offer assistance by removing a chair to accommodate a wheelchair. Ask the guest with crutches if you might put the crutches in the cloakroom. The guest with a walking cane will probably want to place it over the back of a chair.
- **Ill Guest:** If a guest becomes ill during a meal, notify a supervisor immediately who should be responsible for obtaining proper help. Remain with the customer and assist as needed. Help the guest be as comfortable as possible. Do not attempt to move the guest who has fallen and is unconscious. Try to calm the guest who is ill until appropriate help arrives. Assure the guest that help is on the way.

The ability to serve customers with special needs courteously and effectively results in repeat customers. Each employee benefits from behaving in a professional manner.

## Customer Expectations

Individuals eat in foodservice establishments for a variety of reasons. In school cafeterias, hospitals, older adult facilities, airlines, and plant or office cafeterias, customers form a "captive audience." In other words, they have little choice about where they eat. But other individuals eat out in fast-food restaurants, and commercial cafeterias for convenience, variety, entertainment, companionship, prestige, or celebration. Regardless of their reasons for eating in foodservice establishments, people expect a pleasurable experience, personal attention, good food, and a pleasant, relaxed atmosphere.

Many of today's customers are concerned about value. They expect quality and they trust that the food will be safe and satisfying.

Customer expectations vary as their roles vary. A business person may want to make a good impression at a leisurely meal with a client. Students, office workers, and shoppers are often budget-minded and in a hurry. Patients may accept the necessity of a modified diet, but still expect the food to taste good. Food habits or preferences also vary. Cultural, ethnic, and family heritages often influence what people eat. Problems with digestion, food allergies, food likes and dislikes, energy and activity levels, education, and self-awareness all influence individual eating patterns. Personal beliefs about food also affect food choices.

Knowing as much as possible about why people eat at certain establishments, what their needs and motivations are, and their food habits helps service personnel provide the best customer service possible.

## Pleasing Customers

The goodwill of customers is based on their confidence in the quality of food and their appreciation of the service provided. To gain and keep the good will of customers, it is necessary to develop a favorable "image." That image is built from attractive atmospheres, good food, and superior service.

A genuine interest in customers and a willingness to serve them are basic for good customer relations. Employees express interest in guests through attitude, manner, and type of service. Courtesy is essential.

## Courtesy

Courtesy is made up of the many small gestures which make dining out a pleasure. Courtesy is even more important when serving a captive audience. Service personnel have many opportunities to exhibit courtesy. Service personnel may:

- assist customers with packages and wraps.
- provide high-chairs, bibs, and ask parents if their child can have a cookie or cracker.

- bring a newspaper to a person who is eating alone or waiting for the arrival of a friend.
- correct any window glare or draft to ensure guest comfort.
- arrange for music to be turned down and avoid seating guests directly under speakers when possible.
- describe menu items and answer questions cheerfully when asked.
- provide prompt service.
- meet special requests, if possible.
- use good manners at all times.

◆ **Essential Questions:** ◆
**Customer Relations**

1. What are some special needs of customers that foodservice workers might encounter?
2. How can foodservice personnel show courtesy to guests?
3. Why is courtesy important?

## SALES TECHNIQUES

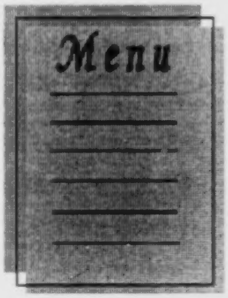
### Displays

Service personnel have an important role in selling menu items. Restaurants obtain customers by both word of mouth and advertising. A variety of public relations techniques are used such as publishing stories and announcements in newspapers, on radio and television, sponsoring club meetings at the restaurant, and extending invitations to special groups. Once customers arrive, the interior design, placemats, menus, and table tents (cardboard advertisements folded like tents) continue to promote the restaurant. But the most important form of merchandising is personal selling by service personnel.

### Menus

A restaurant's menu is the key merchandising tool. The menu should be designed to present the food served by the restaurant in the most effective way possible. Service personnel should know as much as possible about the menu. They should know the day's menu, the choices offered, specials, the prices, how the dishes are prepared and the ingredients used, and the meaning of commonly used foreign menu terms. Knowing the menu helps service personnel answer questions and suggest menu items to customers without taking the time needed to search for answers. This allows employees to perform their jobs more efficiently and professionally.

The two basic types of menus used in restaurants are a la carte (ah la KART) and table d'hote (tahbl DOAT). ***A la carte*** means that each food item is priced separately. ***Table d'hote*** means that the menu features complete meals at set prices. Many restaurants have a combination menu which includes both a la carte and table d'hote prices. On a breakfast menu, table d'hote menus may be called ***club breakfasts.*** Cafeterias and fast-food businesses usually display selections on a menu board. A video menu board and ordering by computer are other recent innovations.



Menus may offer only a few items or many items. They may be printed or prepared each day. Different menus are generally used for each meal of the day. Each follows a fairly standard pattern.

The breakfast menu usually includes fruits and juices, cereals, eggs, breakfast meats, breads and rolls, and beverages. Regional foods, such as grits, hashed brown potatoes, and refried beans, may also be included. Both a la carte and club breakfasts may be offered.

The luncheon menu may include light foods like salads, sandwiches, or soups, as well as heartier foods. The foods are usually arranged into the following categories: appetizers, salads, sandwiches, entrées, vegetables, desserts, and beverages. Both a la carte items and luncheon specials may be offered.

Dinner menus vary greatly according to the type of foodservice offered. The number of courses offered may vary from one to eight. The dinner menu usually includes appetizers, soups, salads, entrées, vegetables, desserts, and beverages. The menu may offer items a la carte, table d'hote, or both. Specials of the day may be offered for individual items or complete meals.

## Suggestive Selling

***Suggestive selling*** means making a suggestion which increases the customer's interest in the menu items. It often enables service personnel to sell something that the customer would not have ordered otherwise. Guests' purchases are influenced through interesting, but honest suggestions.

Suggestive selling begins with a statement in which the guest agrees. A good place to start is with what you already know about the guest. This is particularly true for regular guests. For example, you might make the following suggestions:
- Guest: Tired and chilled
- Suggestion: Vegetable stew

- Guest: Dieter
- Suggestion: Salad plate

- Guest: Construction worker
- Suggestion: Meat, potatoes, and gravy

- Guest: Office worker
- Suggestion: Soup and sandwich

Customers with special nutritional needs also provide opportunities for suggestive selling. Here are some suggestions:
- Diet Restriction: Sugar
- Suggestion: Fresh fruit compote instead of cake

- Diet Restriction: Fat
- Suggestion: Lean, broiled fish instead of deep fried fish

- Diet Restriction: Eggs
- Suggestion: French dressing instead of mayonnaise

- Diet Restriction: Milk
- Suggestion: Roast chicken instead of chicken a la king

- Diet Restriction: Wheat
- Suggestion: Natural, unthickened meat juice instead of gravy

- Diet Restriction: Calories
- Suggestion: Waist-watcher special

Price is a serious consideration for many customers. For customers with limited budgets suggest such items as soup, sandwiches, noodle dishes, salads, hot cakes, and eggs.

Suggest foods that complement one another to increase the total tab. Try these suggestions:
- Food: Sandwich
- Complement: Soup or salad

- Food: Hamburger
- Complement: Fries and a soft drink

- Food: Sweet roll
- Complement: Milk or coffee

- Food: Entrée
- Complement: Vegetables or salad
- Food: Steak
- Complement: Mushrooms or onion rings

- Food: Breakfast
- Complement: Large orange juice or milk

- Food: Spaghetti
- Complement: Garlic bread and salad

Always suggest appetizers, beverages, salads, and vegetables when entrées are selected. After the main course, suggest a dessert. Suggest dessert a la mode (with ice cream) or with coffee. For calorie counters, suggest fresh fruit or a beverage in place of a rich dessert.

Make direct suggestions rather than using questions easily answered with a "No thank you." For example, you might say, "Why don't you start your evening off with an appetizer?" or "What beverage would you like with your dinner? We have hot coffee and tea, iced tea, milk, and soft drinks." These questions are much better than "Would you like a dessert?" or "May I get you anything else?"

Another means of suggestive selling is ***selling up*** by suggesting something more expensive than might otherwise have been chosen. For example, if a guest orders a soft drink, and does not state the size, the employees response should be "Large?" rather than "What size?" If the customer wants a sandwich, but is uncertain which one, suggest the more expensive ones first. If a guest orders a special but seems to want something more, suggest ordering the item a la carte instead and suggest complementary foods.

If a menu item is sold out, tactfully explain the shortage, then suggest another item. You may even sell a substitute at a higher price.

Use descriptive words to whet the guest's appetite. Use colorful adjectives to paint word pictures and make the guest's mouth water. Cafeteria workers have the added advantage of attractive food displays and tantalizing aromas. The following words describe the taste and smell of food items:

- Fruits: Chilled, fresh, juicy, luscious, ripe
- Vegetables: Bland, buttered, crisp, fresh, golden, green, hot, succulent, tender
- Breads: Baked, crusty, fluffy, freshly baked, golden brown, homemade, hot, light, sweet
- Cakes: Chocolate, light, moist, rich, sweet, tender

Words to describe the method of preparation, such as baked, boiled, broiled, fricasseed, fried, and sautéed may also be used. Words to describe appealing qualities like aromatic, clear, creamy, delicate, drizzled, fragrant, mellow, savory, smooth, sour, spicy, sweet, tangy, tantalizing, tart, and zesty are again descriptive words for foods.

Foodservice personnel should suggest featured items of the establishment: regional or ethnic foods, items served with a flair, and specialty desserts. Items associated with the time of day like pancakes and waffles in the morning or sandwiches and salads at lunch could be suggested as well.

Sincere suggestions presented creatively increase sales. Service personnel who know the menu, have tasted the food, and thus can make appropriate and accurate suggestions have a definite advantage in their ability to sell menu items to guests through suggestions they make to customers.

## Overcoming Objections

Not everyone responds positively to suggestions. Reasons that guests respond negatively include the following:

- high price
- method or time needed for preparation
- unappealing selection
- lack of appetite
- calorie content
- personal indecisiveness

The ability to handle objections and turn them into buying decisions affects sales.

Guests opinions and decisions for turning down suggestions should always be respected. Some guest objections indicate a lack of knowledge about food items or preparation techniques. Some objections result from a negative experience in another setting.

The best strategy for handling guest objections is to use them to learn more about guest needs. Perhaps the guest is not really saying "no," but "maybe." Perhaps the guest needs more information pertaining to the suggestion. Listen carefully to what the guest says, then rephrase the objection. Try to uncover the reasons behind the objection without pressing the matter. Agree, at least in part. Offer additional information that further explains the benefits of the suggestion. If a guest objects to the preparation time required, for example, a proper reply might be, "It really doesn't take long, and it's worth the wait." Employees should ask questions and invite guests to ask questions. Resulting answers may lead to alternative suggestions.

## Encouraging Repeat Customers

A pleasant atmosphere, good food, and good service encourage repeat customers. Service personnel have many opportunities to influence the return of customers in such ways like the following:

- Provide information about food, preparation techniques, and eating customs.
- Offer doggie or "people" bags to guests who have leftover food.
- Offer extra napkins if necessary.
- Be continuously positive.
- Ask guests whether the food was to their liking.
- Invite guests to come back.

When guests continue to dine on a regular basis at the facility, employees should do the following:

- Use personal information about guests to serve them better.
- Try to remember names, seating and food preferences of guests.
- Try to remember facts about guests, such as where they work or where they went on vacation.
- Personalize comments.
- Help guests feel more welcomed.

### ◆ Essential Questions: ◆ Sales Techniques

1. What is the difference in an a la carte menu and a table d'hote menu?
2. What is suggestive selling of menu items? Give two examples.
3. What is "selling up?"

## MANAGING SERVICE RESPONSIBILITIES

Service personnel have many duties. Very little of their time is spent in actual customer contact. Most of their time is spent in preparation, going to and from the kitchen, and picking up and assembling orders. Making good use of time and energy are especially important. Service personnel are also responsible for keeping costs down.

## Organization

Well organized establishments will have more time available for serving customers. It is crucial that all employees are aware of their duties and how to perform each assigned task quickly and correctly. Preservice duties should be completed before serving hours so attention can be devoted to customers.

Movements planned carefully save energy. Employees should ask themselves, "How many things can I accomplish on this trip?" Employees should try not to return to the kitchen or leave the kitchen empty-handed. Energy is saved when water glasses and coffee cups are refilled for several tables in one trip, and food orders for the kitchen are brought back on the return trip. Service personnel should keep busy during slow periods. Organization enables foodservice workers to handle more tables in a shorter period of time. In addition, prompt service means bigger tips.

Organization includes proper loading and handling of trays. Trays should not be overloaded. Loading trays properly helps prevent breakage and spillage. Shoulder carrying of properly loaded trays can be a quick, efficient, and safe task. Employees can learn how to balance the items on trays with care.

If the tray is to be carried on the shoulders of employees, the portion of the tray weighing the most is placed nearest the shoulder. Main dishes or plates are placed at 5, 6, and 7 o'clock positions on the tray. Lighter dishes are placed at 3 and 9 o'clock. When clearing tables, glasses, silver, and cups are placed in the center of the tray. Other lightweight items are placed at 12 o'clock.

The following instructions should be used to properly lift trays:

1. Use both hands.
2. Crouch by the counter or tray stand.
3. Place one shoulder under the 6 o'clock position of the tray.
4. Place one hand under the center of the tray.
5. Balance the tray on the fingertips or cushion of the fingers.
6. Use the other hand to grasp the edge.
7. Slide the tray onto the shoulder slowly and carefully.
8. Stand up using the leg muscles to lift the tray.
9. Use the free hand for opening doors and steadying the tray.
10. To set the tray down, reverse the procedure.

If the tray is not carried on the shoulder but rather in front of the employee, heavy dishes are placed in the center with cups and glasses on the outside.

## Saving Money

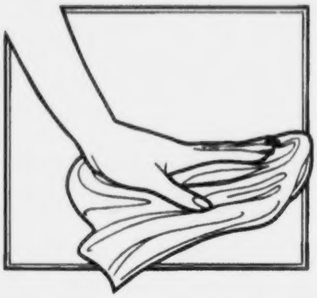
Service personnel can help save money in the foodservice establishment. They can help reduce costs by using food, equipment, and supplies with care. They can help save money by handling checks accurately. Honesty and integrity are essential.

**Reducing Costs.** Food should not be wasted. In a safe and cost-efficient foodserivce facility, employees ensure the following:

- perishable foods are kept refrigerated
- garnishes are prepared in quantities based on expected use
- orders are taken accurately and picked up promptly from the kitchen to ensure high quality
- careful attention is paid to portion control

promptly from the kitchen to ensure high quality
- careful attention is paid to portion control
- food items, such as ketchup and mustard that are served in bottles or sealed containers are wiped off, recovered and properly stored for future use
- bread and chips in open baskets are discarded

To help reduce costs of equipment and supplies, foodservice employees should do the following:
- handle equipment with care and ensure it is turned off when not in use
- handle dishes and glassware with care to prevent breakage
- handle silverware gently when separating from paper and garbage to prevent damage and loss
- avoid waste, abuse, or misuse of supplies, including disposable items
- use service towels and cloths for cleaning; not the table linens and napkins



**Controlling Costs.** Mistakes on guests checks and employee dishonesty cost the establishment a substantial percentage of net profits. Service personnel have an important role in maintaining a control system. Common errors on guest checks include the following:
- failure to note all items ordered
- charging the wrong price for menu items
- mistakes in addition
- wrongly computed sales taxes, and
- errors in making change

Losses caused by mistakes on guest checks and in giving change may be taken out of service personnel's pay. Electronic cash registers with pre-programmed prices and using a duplicate check system helps to ensure accuracy.

Dishonesty or carelessness in the use of guest checks also costs the foodservice business money. To prevent theft, most establishments handle guests' checks as though they were cash. Numbered checks are issued to service personnel. If checks must be voided or canceled, a manager or other authorized personnel should be asked to countersign the check immediately. The check should be turned in to the cashier. Policies are established regarding issuing individual checks and service charges to large parties. The number of guests served on each check must be carefully noted to ensure that all guests pay for their meals. Policies stating that checks are to be paid at the cashier station should be carefully observed.

## Total Quality Service

The ***Total Quality Service (TQS)*** concept is used to ensure customer satisfaction. If a customer has a bad experience in a restaurant, he or she probably will not return. Therefore, employees need to be properly trained by management to deliver outstanding service to the customer. A returning customer ensures more business for the organization.

### ◆ Essential Questions: ◆
### Managing Service Responsibilities

1. Why is a well-organized foodservice establishment more likely to succeed than a disorganized one?
2. How can foodservice workers help save money in the foodservice establishment?
3. What is Total Quality Service (TQS)?

## Chapter Highlights

- Service personnel must interact effectively with customers in order to ensure customer satisfaction and ultimately, the success of the foodservice establishment.

- Appearance is the first thing customers evaluate about service personnel. Most foodservice operations require service personnel to wear uniforms.

- Human relations is concerned with how effectively individuals deal with one another. Human relations affect productivity, creativity, morale, and success of the business.

- A genuine interest in customers and a willingness to serve them are basic for good customer relations. Employees express interest in guests through attitude, manner, and type of service. Courtesy is essential.

- Foodservice personnel must function as a team. A spirit of cooperation is essential to ensure satisfied customers and increased profits. Common areas of conflict among foodservice workers involve order pick up, cleanliness of the service stands, and gratuities.

- A restaurant menu is the key merchandising tool in foodservice. Service personnel have an important role in selling menu items.

- The two basic types of menus used in restaurants are a la carte and table d' hote. Video and computer-type menus are emerging trends in foodservice.

- Guests' purchases are influenced by service personnel through suggestive selling of menu items. Suggestive selling involves anticipating the customer's food desires, suggesting accompaniments for food items ordered, suggesting desserts, making direct suggestions, and using descriptive words to whet the guest's appetite.

- Organization of serving tasks makes more time available for serving customers. Movements should be planned carefully to save energy.

- Loading trays properly helps prevent breakage and spillage. It allows the foodservice worker to carry trays quickly, efficiently, and safely.

- Service personnel help save money by preventing waste in food or supplies, handling equipment carefully, and avoiding errors when handling guest checks.

- The Total Quality Service (TQS) concept is used to ensure customer satisfaction.

# Chapter 4

## Forms of Service

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

4B Describe forms of service utilized in foodservice establishments for presenting food to guests.
7G Use appropriate terminology related to the food production and service industry.
10A Describe roles and responsibilities in foodservice operations.
10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.
10E Perform appropriate tasks in foodservice according to industry standards.

### Chapter Vocabulary

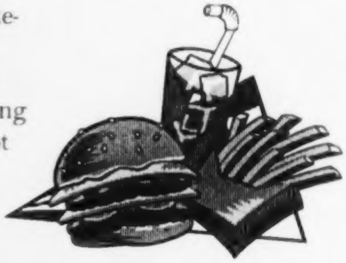
American service
banquet service
buffet service
chef de rang
cold course
commis de rang
counter service
cover
English service
family service
French buffet
French-style service
gueridon
host or hostess
maître d'
plates the food
rechaud
Russian service
silencer
smorgasbord
table tents
tines
trayline service
tureens

Foodservice is versatile. Counter, trayline, seated service, or a combination of these is offered by foodservice units. Foodservice employees need to become familiar with the forms of service available and the table settings used for each. Service of food to the customer is the major objective of a foodservice organization.

## FORMS OF SERVICE

Sometimes foodservice customers or guests are in a hurry and want to be served quickly. At other times, foodservice customers want to enjoy a leisure meal. However, whether customers pick up their food at a counter, walk through a trayline, or are served at a table, courteous service is always expected.

## Counter Service



***Counter service*** is usually found in fast-food or quick-service restaurant units. The menu is usually limited and take-out service is often available. Tables for dining may or may not be provided. The person behind the counter takes the customer's order, serves the food on a tray or in a takeout bag, and receives the customer's money. In most fast-food units the counter worker relays the order to the kitchen where the food is assembled.

Easy-to-prepare meals, pre-packaged foods, short order items, and fountain items usually are featured in establishments which offer counter service. The food is prepared in the kitchen, on the back bar, or in view of the customer. Some food may be prepared ahead of time and stored temporarily in holding bins. Condiments, napkins, and utensils are arranged on the counter or on a condiment stand for customer self-service. Supplies and condiments needed for self-service are stored beneath the counter.

The counter worker waits on customers as they come to the counter. Counter workers should keep the counter, back bar, and area beneath the counter clean and in order. Condiments, napkins, and other counter accessories should be kept stocked and within easy reach. Some counter workers are responsible for preparing food, busing tables, cleaning the counter, and performing other duties as requested.

Counter service saves time for the customer. Service is simple, but fast. Examples of foodservice establishments that offer counter service are coffee shops, diners, snackbars, drive-ins, fountain-grills, and fast-food franchises.

## Trayline Service

***Trayline service*** is the use of trays to transport menu items from the kitchen or the serving area to the dining room. Trayline service is used in cafeteria and smorgasbord-style restaurants and in school and hospital cafeterias.

In trayline service, all food items are ready to serve when the customer arrives. One foodservice worker is usually responsible for each major work area. The foodservice worker is responsible for keeping containers filled, keeping serving equipment readily available, keeping the area clean, keeping food in an orderly and attractive arrangement, and controlling portions. The worker places food onto a dish, or ***plates the food,*** that the customer requests.

Customers usually pick up trays at the beginning of the trayline and collect the dished or plated food they have requested and place them on their trays. Customers may have meal cards that are punched at the beginning or at the end of the line, or they may be charged for each individual item and pay at the end of the line or as they leave.

A cafeteria trayline needs to move quickly and smoothly. The trayline worker restocks food items as needed, and should be ready to answer customer's questions and offer suggestions to those who are indecisive.

## Seated Service

Seated service units generally have an extensive menu that offers a wide number of choices to the customer. A combination of traditional type services is characteristic of most restaurants. Foodservice workers should become familiar with American, French, Russian, and English, buffets, banquets, or combination services.

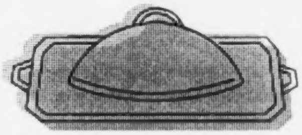
Many restaurants use a combination of the above services. A restaurant may serve some foods from a serving cart individually, while other foods are pre-plated or passed around. Salad bars and dessert tables are often combined with American style service. Any style of service can be used for serving breakfast, lunch, or dinner.

**American Service.** ***American*** or ***plate service*** is the most common style of foodservice available in restaurants in the United States. A ***host, hostess***, or ***maître d'*** greets and seats customers and give them a menu. The food ordered by each customer is put on a plate in the kitchen and garnished appropriately. Usually, salad and bread are served on separate plates. The waitperson carries filled plates on a tray to a tray stand. Plates are served with the left hand, from the left side of each guest. Beverages are served from the right, and soiled dishes are removed from the right. American service is fast, inexpensive, and easily learned by beginning foodservice workers.

**French Service.** *French-style service* originated for European nobility and is used in more elaborate restaurants. Two waitpersons work together to "finish" the preparation at the table. The food is served from a cart called a ***gueridon*** (gai ree DAWN), and a small spirit stove, or ***rechaud*** (rai SHOW), is used to keep the food warm. The ***chef de rang*** (or experienced waitperson) may seat the guests, take the order, serve the drinks, prepare some of the food, and present the check. The ***commis de rang*** (assistant) takes the order from the chef de rang to the kitchen, picks up the food, carries it to the dining room, serves the meal, and clears the dishes. Plates are served and cleared from the right side of each guest. The butter, bread, and salad are placed to the left side of each guest. A finger bowl is always served at the end of any meal. The finger bowl is placed directly in front of the guest. If foods, such as lobster or chicken, are eaten with the fingers, a finger bowl is offered with the course.

Guests receive a great deal of attention in French service. However, French service is very expensive, requires extra space, requires a larger professional staff, and is very time-consuming.

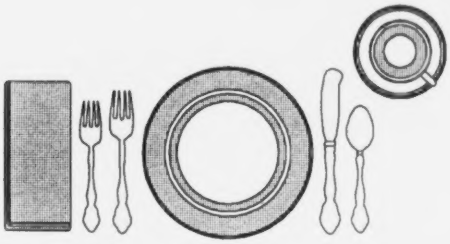
**Russian Service.** ***Russian service*** is much like French service but is simpler, faster, and less expensive. The food is prepared in the kitchen; the waitperson places the food on a silver platter and then shows the food to the guest. The waiter serves the desired portion from the host's left, moving counterclockwise around the table. Unserved food is returned to the kitchen.



**English Service.** ***English service*** is used for a special dinner in a private dining room of a restaurant and is typical of the service in English homes where the head of the household, assisted by the servants, serves the food. The waitperson places the food on a trolley or table in view of the guests. The "host" serves each course from service ***tureens*** or platters onto individual plates. The host then hands the plate to the waitperson who is standing to his or her left side who in turn serves the hostess, guest of honor, and remaining guests. The hostess may receive all partially filled plates and serve the vegetables or other side dishes. Some side dishes may be placed on the table and passed by the guests.

Another type of English service is referred to as ***family service***. In family service, the meal is prepared in the kitchen and dished up on serving platters and in bowls. The serving dishes are placed in the center of the table, and the food is passed around the table by the guests who serve themselves.

**Buffet Service.** In ***buffet service***, the guests serve themselves from a choice of foods placed on a long serving table. A large number of guests may be served utilizing a minimum of service personnel. The plates are placed conveniently at the serving table. The silverware and napkins are placed beside the plates or are preset at the dining tables. In most buffet service, the servers are only responsible for serving beverages and dessert, or they stand at the end of the table and carve and serve the meat. Attractiveness of the buffet table plays a key role in the success of buffet service.



Two adaptations of buffet service are ***French buffet*** and ***smorgasbord***. The French buffet is more elaborate and includes more food items than the standard buffet. Waitpersons serve guests individually. The French buffet requires extra plates and cutlery for salads and desserts.

Smorgasbords feature Scandinavian foods, such as pickled and smoked fish, cheeses, cold meats, salads, and vegetables. Smorgasbords are more elaborate than buffets, with a greater variety of menu choices. Buffet, French buffet, or smorgasbord styles are used by caterers of large meals.

**Banquet Service.** ***Banquet service*** is used when serving a predetermined menu to a set number of guests. American or Russian style service is usually adapted for banquet service. The tables are prepared including the ***cold course*** (tomato juice, shrimp cocktail, or a salad), iced water, and bread and butter. If American service is used, the food is plated in the kitchen and then served. The head table is served before the other tables are served.

The major advantage of banquet service is that many guests can be served by few staff members. This means, however, that very little personal attention is given to guests.

◆ ***Essential Questions:*** ◆

***Forms of Service***

1. What are the responsibilities of the foodservice worker doing counter service?
2. What are the responsibilities of the foodservice workers in trayline service?
3. What are the advantages and disadvantages of American service, French service, Russian service, and English service?
4. How do banquet service and buffet service differ? What are the responsibilities of foodservice workers for each type of service?
5. How does the form of service affect the foodservice establishment?

## TABLE SETTINGS

The responsibilities of the foodservice worker may range from folding napkins to completely setting the table. Foodservice workers need to be familiar with the foodservice establishment's rules for table setting. These rules are designed for customer comfort and convenience. Tables should be checked for position and balance before covering. If the table is unbalanced, it can be rotated, or a piece of cork can be placed under the shorter legs. Table tops should be clean and dry.

## Covering the Table

The appropriate size tablecloth for the table should be used. The tablecloth should hang evenly, and the edges should not extend below the seat of the chairs. A ***silencer*** or padding may be used beneath the top cloth to give the table a better appearance and to minimize noise. Foodservice workers should be able to replace a tablecloth quickly and efficiently. One way to do this is to place the centerfold of the cloth at the center of the table; open the cloth and gather it at the center, leaving one end in place. Transfer the ashtrays and salt and pepper shakers to that end of the cloth, then spread the other half of the cloth over the table.

If place mats are used, they should be arranged neatly on clean tables. They may be even with or 1/2 inch in from the table edges. If the table has a rounded edge, place the mat so that the two lower corners touch the edge of the table. If the mat is round, its edge should be touching the edge of the table.

## Setting the Table

The table setting, or ***cover***, varies with the type of service used, the meal being served, and the preference of individual restaurants. The cover is the arrangement of flatware, dinnerware, glassware, and linens at each place setting. Approximately 24 inches by 15 inches is allowed for each cover. Flatware, dinnerware, and napkins are placed about one inch from the edge of the table or the edge of the place mat. Covers should be laid neatly, as they are the customers' first impression of the quality of foodservice offered at the foodservice establishment.

**Napkins.** Napkins are folded and placed to the left of the fork, or folded in special ways and stood in the center of each cover. When the napkin is placed to the left of the last fork, the bottom edge of the napkin should be about 1/2 inch higher than the bottom edge of the fork. Some trayline services roll the flatware in napkins or use paper napkins from a dispenser. The open corners of a napkin should be to the left so the guest can simply pick up the napkin and unfold it. Elaborate folds of napkins may be used, although even the most elegant of restaurants often use simple flat folds. Refer to Figure 4.1 for various ways napkins can be folded.

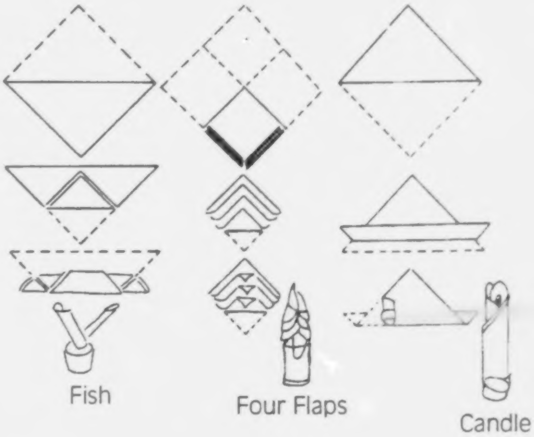


***Figure 4.1***

**Flatware.** All flatware is evenly arranged in order of use from the outside of the setting toward the plate or center of the cover. Flatware is usually placed between 1/4 inch and 1 1/4 inches from the table edge. Forks are placed on the left side of the cover with the ***tines***, or points of the fork, facing up. If the plate is not included when the table cover is set, a space of about nine inches should be left between the knives and forks. Knives are placed on the right side of the cover with the cutting edges turned toward the center. Spoons are placed to the right of the knives with the hollow, or bowl of the spoon, facing up.

**Glassware.** The placement of glassware depends on its intended use. The water glass is placed on the right side of the cover above the tip of the knife. The coffee cup is placed to the right of the water glass, or to the right of the knives and spoons, with the handle turned to the right. The wine glass is placed to the right of the water glass. Glassware may be placed in order of use or aligned according to size.

**Plateware.** The bread and butter plate is placed on the left side of the cover directly above the fork. If a butter spreader is used, it is placed across the top edge or on the right side of the bread and butter plate with the cutting edge turned toward the center of the plate. The salad plate or bowl is placed slightly below the bread and butter plate and to the left. If a dessert fork and spoon are laid, they are placed above and parallel to the plate with the handle of the spoon to the right. However, often the dessert flatware is brought in with the dessert.

**Accessories and Condiments.** Table accessories include ashtrays, matches, ***table tents*** (cardboard advertisements folded like "tents"), napkin dispensers, menu stands, flowers, straws, and candles. Condiments include salt and pepper, sweetener, bottled sauces, oil and vinegar cruets, pickles, crackers, and cream or coffee whitener. Condiments and contained accessories should be checked, cleaned, and refilled periodically. Candles should be replaced if they are burnt low, and flowers, if real, should have a fresh appearance. Table tents and menu stands should be uniformly placed.

## Sample Table Settings

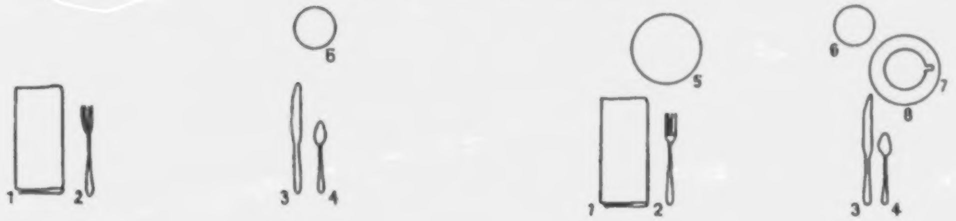
Table settings are arranged according to the type of service used, the meal being served, or the preference of individual restaurants. American covers vary for breakfast, lunch, and dinner. Refer to Figure 4.2 for the various American covers.

The cover for French and Russian service must provide for a meal consisting of hors d'oeuvres or soup, entrée, and dessert. Refer to Figure 4.3 for an example of the French and Russian settings. The English setting is similar to the American setting, but the food and plates are placed before the host at the head of the table.

Sample table settings for buffet service are shown in Figure 4.4 and Figure 4.5. Figure 4.4 is a buffet suitable for serving small numbers of guests. Figure 4.5 shows an example of a buffet service table setting for serving large numbers.

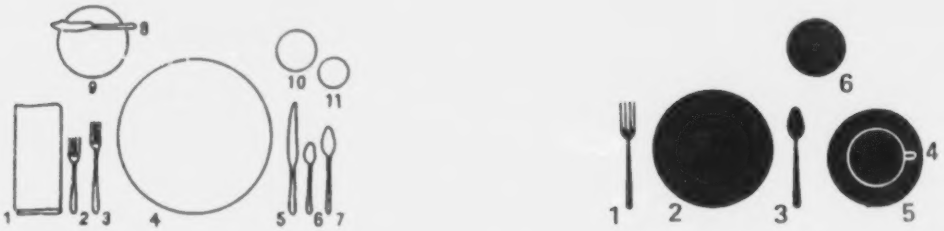
Restaurants which use combination service choose to set the table according to the time of day that the meal is served. In this case, cover set-ups change throughout the day, and foodservice personnel must be familiar with the table settings used for the different meals.

## Sample Table Settings
## For American Service



Cover setup for breakfast:
(1) Napkin, (2) Dinner fork, (3) Dinner knife,
(4) Teaspoon, (5) Water glass

Cover setup for lunch:
(1) Napkin, (2) Dinner fork, (3) Dinner knife,
(4) Teaspoon, (5) Bread and butter plate,
(6) Water glass, (7) Cup, (8) Saucer



Cover setup for dinner:
(1) Napkin, (2) Salad fork, (3) Dinner fork,
(4) Cover plate, (5) Dinner knife,
(6) Teaspoon, (7) Soup spoon, (8) Butter spreader, (9) Bread and butter plate,
(10) Water goblet, (11) Wine glass

Cover setup for dessert course:
(1) Dessert fork, (2) Dessert plate,
(3) Teaspoon, (4) Cup,
(5) Saucer, (6) Water glass or goblet

*Figure 4.2*

## Sample Table Settings
## For French and Russian Service

Serviceware in French service includes the following:
(1) Butter plate, (2) Butter spreader,
(3) Dinner fork, (4) Dinner knife,
(5) Soup spoon, (6) Dessert spoon,
(7) Dessert fork, (8) Hors d'oeuvre plate,
(9) Napkin, (10) Water glass

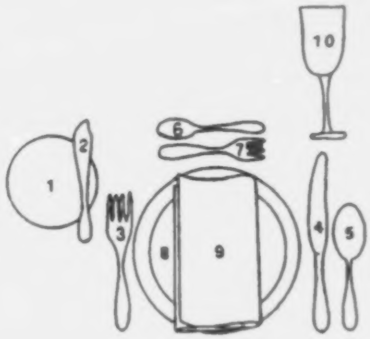
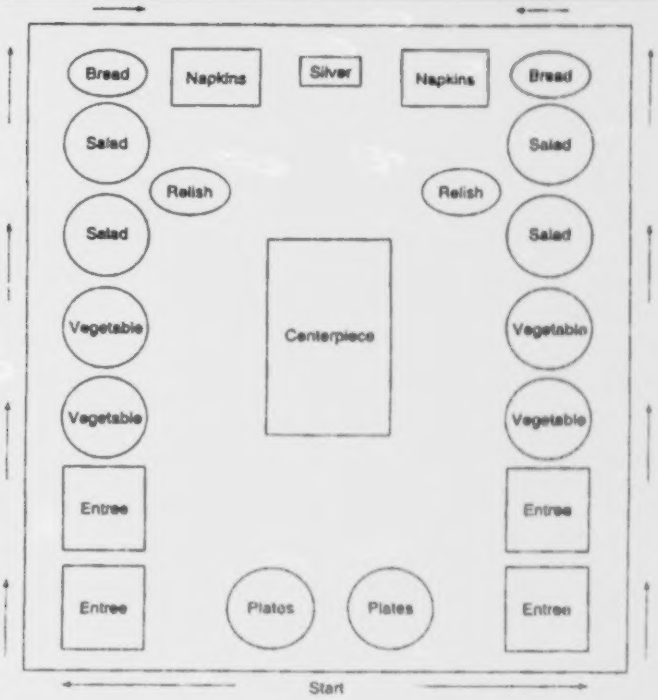


*Figure 4.3*

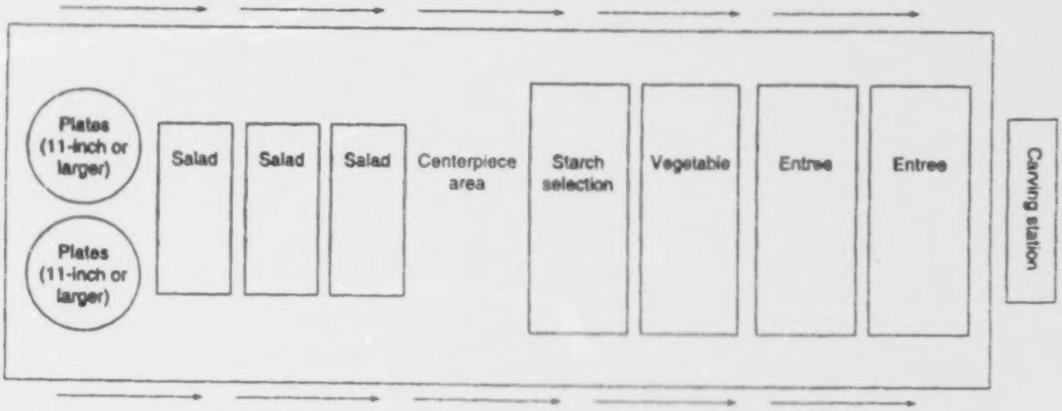
## Buffet Service for Small Number of Guests


Bread
Napkins
Silver
Napkins
Bread
Salad
Salad
Relish
Relish
Salad
Salad
Centerpiece
Vegetable
Vegetable
Vegetable
Vegetable
Entree
Entree
Entree
Plates
Plates
Entree
Start

Source: Food for Fifty, Mary Molt, Copyright © 1997 by Prentice Hall. Reprinted by permission of Prentice Hall.

*Figure 4.4*

## Buffet Service for Large Number of Guests


Plates (11-inch or larger)
Plates (11-inch or larger)
Salad
Salad
Salad
Centerpiece area
Starch selection
Vegetable
Entree
Entree
Carving station

Source: Food for Fifty, Mary Molt, Copyright © 1997 by Prentice Hall. Reprinted by permission of Prentice Hall.

*Figure 4.5*

### ◆ Essential Questions: ◆
### Table Settings

1. What items are placed at one cover for a meal? Draw an illustration of one cover for an American lunch with salad, bread, entrée, iced tea, and water.

2. Why is a silencer used?

3. How much space should be allowed for each cover? Why?

4. What are the guidelines for tablecloths and place mats? Describe the procedures for replacing a tablecloth and cover in preparation for new guests.

5. What are the guidelines for placing each of the following:
   - napkins?
   - flatware?
   - glassware?
   - plateware?
   - table accessories?
   - condiments?

6. Why are appropriate table settings important to the foodservice establishment?

# Chapter Highlights

- ☆ The major objective of the foodservice organization is service of food to the customer.
- ☆ Three types of foodservice are counter, trayline, and seated service.
- ☆ Counter service usually is found in fast-food or quick-service restaurants. Trayline service is used in cafeterias, smorgasbord-style restaurants, schools, and hospital foodservice facilities.
- ☆ Seated service includes American, French, Russian, English, buffet, and banquet service. A combination of these traditional type services is characteristic of most restaurants.
- ☆ In American service, the food ordered by each customer is put on a plate in the kitchen and garnished appropriately.
- ☆ French service is the most elaborate type of service, and guests receive a great deal of attention. Some final food preparation is completed at the table. Russian service is similar to French service but is simpler, faster, and less expensive.
- ☆ In English service, the host serves each course onto individual plates from service tureens or platters. Another type of English service is family service where food is passed around the table by guests who serve themselves.
- ☆ In buffet service, guests serve themselves from a choice of foods placed on a long serving table. The French buffet and the smorgasbord are adaptations of the buffet service.
- ☆ Banquet service is used when serving a predetermined menu to a set number of guests. American or Russian style service is usually adapted for banquet service.
- ☆ Foodservice workers need to be familiar with the foodservice establishment's rules for table setting. These rules are designed for the customer's comfort and convenience.
- ☆ An appropriate size tablecloth or appropriately placed place mats should be used over a clean table. A silencer or padding may be used beneath a tablecloth.
- ☆ A cover is the arrangement of flatware, dinnerware, glassware, and linens at each place setting. Approximately 24 inches by 15 inches is allowed for each cover.
- ☆ Table accessories and condiments are part of the table setting and should be attractively arranged.

# Chapter 5

## Table Service

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

4B Describe forms of service utilized in foodservice establishments for presenting food to guests.

7G Use appropriate terminology related to the food production and service industry.

10A Describe roles and responsibilities in foodservice operations.

10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.

10E Perform appropriate tasks in foodservice according to industry standards.

10G Apply available technology in foodservice.

11D Apply techniques that promote customer service and satisfaction.

### Chapter Vocabulary

banquette (sofa seat)
checker
table service
table-service restaurants

In ***table service***, food is served to customers by the wait staff. Customers are seated at either tables or booths. Table service restaurants offer limited to extensive menu choices. They may feature a certain type of food like seafood, or they may carry a variety of foods. Some table service restaurants have a special theme such as ethnic, regional, or a selected period of time, or they may be supper clubs or night clubs.

***Table-service restaurants*** are found in specially-designed buildings, office buildings, department stores, shopping centers, ships, or trains. In addition to table service, their service might include counter service, soup and salad bars, buffet service, banquet service, room service, or takeout service.

Customer complaints about poor service (i.e., waiting in line or being served the wrong menu item) are a problem in the foodservice industry. Customers complain about poorly served food that is of high quality. Food of mediocre quality will meet the customer's satisfaction if it is served well. Well-trained and courteous wait staff are essential to effective table service.

## WELCOMING AND SEATING CUSTOMERS

In most restaurants, the guests' first contact is with the head of the wait staff, maître d'hôtel, or host/hostess, who escorts them to their table. Occasionally, wait staff greet guests at the door and escort them to their table.

The greeter greets the guest with a pleasant, "Good morning (afternoon or evening)." If the greeter is busy, the guest should be told, "I'll be with you in a moment," or "I'll be right with you."

Some restaurants take reservations for tables. If so, the person who greets guests must determine whether the guests have reservations. If the guests have reservations, the information is checked off in the reservation book and the party is escorted to the assigned table. If not, the greeter asks how many persons are in the party. The greeter then selects an appropriate table for the guests.

The selection of a table is based on the guests' preferences (i.e., non-smoking, view of outdoors, or certain wait staff's station), age, status (i.e., regular customers often wish to sit at the same table), or party size. An attempt is made to balance the dining room so that one station is not overworked. If a group or an individual appears to be noisy and disruptive, they should be seated well away from other guests. If a family has a small child who requires a highchair, the child should be seated where the chair does not interfere with safe passage in the aisle or around the table. Visually impaired guests should be told about unexpected obstacles in their path and how the placement of the cover at the table is arranged (such as a napkin in the water goblet). Guests in wheelchairs should be led to a table where the wheelchair will not obstruct traffic. Whether a guest should be allowed to dine in the restaurant or not should be left up to the manager.

After an appropriate table is selected, the party is asked to follow the maître d' or host/hostess to their table. Service personnel should assist guests with wraps and parcels if needed. In most of the finer restaurants, the best seat is pulled out and offered to the lady of a party of two, or to the eldest lady of a larger party. Other ladies are assisted with their chairs if appropriate. If guests are seated at a wall table, the table should be pulled away from the ***banquette (sofa seat)***, so that guests in the party can seat themselves with ease. After guests are comfortably seated, the service person returns the table to a comfortable distance from seated guests and in a parallel position to the wall.

### ***Presenting Menus***

After guests are seated, they should be presented with menus. Service personnel at fine dining establishments often offer to help guests with their napkins prior to presenting the menus. Menus are presented to guests from the left. Menus are presented either open or closed depending upon the customary policy of the restaurant. Menus are presented to a group beginning with the person to the right of the host or hostess and proceeding counterclockwise around the table.

After presenting the menus, the service employee should remain busy while guests take their time to study the menu. Chores, such as removing or adding extra place settings, filling water glasses, and placing bread and butter on the table, are done at this time.

Service personnel should be prepared to answer any questions guests have concerning the menu, correctly pronounce the name of every dish, and be able to provide a description of each. Service personnel also should be able to provide such information as the following: whether "in season" items are available; the daily specials; garnishes; soups; preparation times required by specific items; sold out food items; and the policies of the establishment.

### ◆ Essential Questions: ◆
**Welcoming and Seating Customers**

1. In most restaurants, who is the guest's first contact? What are the responsibilities of this person?
2. What are the guidelines for assigning guests to tables and for seating guests at a table?
3. What are the guidelines for offering menus to guests?

## FOOD AND BEVERAGE ORDERS

### Writing Orders

When guests have had enough time to make their selections, service personnel should stand near the table with both feet on the floor and a straight posture. The order pad is held firmly in hand. If guests have difficulty in deciding, service personnel should point out the daily specials and answer any questions that guests have. Suggestions are made according to the policies of the establishment. Service personnel should be helpful without rushing or displaying impatience. However, there are situations when guests are in a hurry and require quick service. It is important for service personnel to recognize these times and assist customers as needed. Generally, each restaurant has a preference for the sequence in which the order is taken at the table.

Prior to writing the order, service personnel complete the general information required on the guest check:
- date
- table number
- name of server
- number of guests in the party.

A code or system should be used that identifies the location of each person with the food item(s) ordered. Examples of systems for identifying food orders with individual guests at a table include:
- The server stands at the lower left corner (called "pivot point") of the table and records orders starting with the person on the left and proceeds counterclockwise.
- The server establishes a person as a reference (such as the woman wearing the red dress) and proceeds counterclockwise.
- The server mentally numbers the chairs, starting with a certain chair and noting the location of the first chair.
- The server uses compass points (north, south, east, west) as references.

Service personnel then proceed left to right around the table taking orders from each guest. If the establishment's policy permits, large groups are asked if they want separate checks.

Orders should be written or printed clearly according to the establishment's policies. Items ordered may be checked on a printed order pad which lists all food items on the menu or written on a blank order pad. It is crucial that all written orders are easily readable by kitchen personnel and cashiers. As each guest orders, service personnel should repeat what was ordered before recording it in order to clarify exactly what the customer wants. The following list includes examples of questions to ask guests in order to make certain the food order is recorded correctly:

- How should the eggs be cooked?
- Do you desire your meat to be rare, medium, or well-done?
- What type of salad dressing do you prefer?
- Would you like your salad dressing or sauce on the side?
- Would you like a bowl or a cup of soup?
- Which choice of vegetables do you prefer?
- What accompaniments for your potato would you like?

Guest's choices are recorded on the check using abbreviations and codes which are clear to everyone who will be interpreting the check, such as the head waitperson, other wait staff, kitchen personnel, and the cashier. Standard menu items have fairly standard abbreviations. Each foodservice facility develops their own system for taking orders. Service, kitchen, and cashier personnel must learn and adhere to the system that is adopted by the establishment where they are employed. Table 5.1 lists abbreviations of food items that are commonly served in foodservice facilities. These abbreviations are representative of a system used for writing orders.

## Placing Orders

Before placing the order in the kitchen, service personnel should summarize the order (for example 3 sirloin steaks, 2 medium, 1 rare). Items that are prepared by the kitchen staff should be identified. Usually wait staff are responsible for securing fruit juice, bread, soups, butter, condiments, and beverages. Wait staff may be responsible for portioning ready-to-serve foods.

Each restaurant has its own method for placing the order in the kitchen. Four commonly used methods are outlined below:

1. The waitperson server calls in the order in a clear voice or over an intercom. Shortcuts are used as in writing the check. For example, an order for a tuna sandwich on white bread may be stated as "tuna white." Everyone must use the same abbreviations. Some restaurants require that order placement begin with the words "ordering" and "table number____." The person receiving the order may be required to repeat the order to ensure that the order was heard correctly.

2. Written orders are placed on a spindle and new orders are added to the right. Orders are filled from the left. This keeps orders in the same sequence as they were placed. The person submitting the order may be required to read it aloud as well. When the order is ready, the cook puts the check with the order to aid in checking that the order is complete.

3. A designated kitchen employee (the chef, expediter, or announcer) reads the order aloud.

4. Wait staff punch the order in on a computerized ordering device which automatically relays the parts of the order to screens in the proper areas of the kitchen.

## Common Abbreviations Used in Foodservice

| Appetizer | Abbreviation |
|---|---|
| clam chowder | chow |
| fruit cocktail | FrC |
| orange juice | OJ |
| shrimp cocktail | ShC |
| soup of the day | S |
| tomato juice | Tj |
| **Main Dish** | **Abbreviation** |
| barbecue beef | BBQ |
| beef burgundy | Bf Burg |
| Chateaubriand | Chat |
| cheeseburger | C Burg |
| chicken pot pie | Chix Pie |
| corned beef | Crn Bf |
| filet mignon | Mig |
| frankfurter | Frank |
| fried chicken | FChix |
| ham steak | Ham S |
| hamburger | Burg |
| hamburger steak | Burg S |
| lamb chops | LC |
| london broil | LB |
| pork chops | PC |
| pot roast | PR |
| roast beef | RB |
| sirloin steak | SS |

➾ ***Table 5.1***

**Common Abbreviations Used in Foodservice, Cont'd.**

| Sandwich | Abbreviation |
|---|---|
| American cheese, mustard | AC, mus |
| bacon, lettuce, and tomato | BLT |
| grilled cheese | GC |
| ham and Swiss with mayonnaise | H&S (r, w), mayo |
| ham on rye; ham on white | Hs, r; Hs, w |
| steak sandwich | Ss |
| Swiss cheese | Swiss |
| tuna sandwich | Ts |
| turkey, lettuce, and tomato | Turk (r, w), LT |
| **Salad** | **Abbreviation** |
| chef's salad | CS or Chef Sal |
| lettuce and tomato | LT |
| tossed green salad | Sal |
| **Dressing** | **Abbreviation** |
| French | f |
| Green Goddess | gg |
| Oil and vinegar | ol |
| Russian | r |
| Thousand Island | t |

➩ *Table 5.1, cont'd.*

**Common Abbreviations Used in Foodservice, Cont'd.**

| Vegetable | Abbreviation |
|---|---|
| baked beans | bb |
| baked potato | bp |
| baked potato with sour cream | bp, s |
| carrots | c |
| coleslaw | col |
| french fried potatoes | ff |
| mashed potatoes | mash |
| onion rings | or |
| peas | p |
| potato salad | potsl |
| string beans | sb |
| **Beverage** | **Abbreviation** |
| buttermilk | ButM |
| coca cola | Coke |
| coffee | Cof |
| grape drink | Gd |
| iced coffee | I Cof |
| iced tea | IT |
| milk | M |
| orange drink | Od |
| skimmed milk | Skim |
| tea | T |

*Table 5.1, cont'd.*

**Common Abbreviations Used in Foodservice, Cont'd.**

| Dessert | Abbreviation |
|---|---|
| ice cream, strawberry | Str |
| ice cream, vanilla | Van |
| ice cream soda, chocolate (syrup first, then ice cream) | ChocOVan (O for soda) or BW (black and white) |
| ice cream soda with chocolate cream and chocolate syrup | ChocOChoc or AB (all black) |
| pastry, Danish | Dan |
| pie, apple | A Pie |
| pie, apple, a la mode, vanilla ice cream | A Pie, van |
| pie, blueberry | B Pie |
| pudding, chocolate | C Pud |
| pudding, vanilla | V Pud |
| sundae, chocolate (ice cream first, then syrup) | VanSChoc |
| sundae, strawberry | VanSStr |
| sundae, strawberry with strawberry ice cream and syrup | StrSStr |

***Table 5.1, cont'd.***

Whatever method is used, clear communication is very important. Orders should be placed promptly, and procedures used in the restaurant should be well observed. This helps avoid mixed up orders during rush hours.

When guests who are together request separate checks, the kitchen should be notified that those orders should be prepared at the same time. Each restaurant has its own way of showing that several checks go together. They may be given a special mark or clipped together.

It is important that orders be placed carefully in the kitchen. This becomes a problem especially during rush hours. Order pads should be double checked to ensure that all orders have been turned in. If the order does not appear within a reasonable length of time, service personnel should alert the kitchen staff to make sure that the order has not been misplaced or forgotten. Customers should be reassured that they have not been forgotten. Service personnel may offer to bring them something else, such as a salad or an appetizer.

## Timing Orders

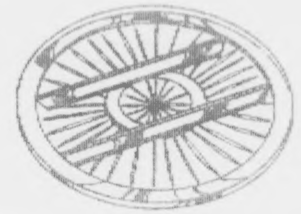
The waitperson should know the preparation time required for each food item, which items are already prepared, how long each food item takes to cook, and how long in advance to place an order to ensure that the order is ready in a reasonable amount of time. Management should prepare a chart of cooking times needed by kitchen personnel to aid in timing orders.

When possible, most waitpersons find it helpful to take orders from several tables at once. Food items requiring preparation can be turned in to the kitchen in a single trip. While entrees are being prepared, soups, appetizers, and beverages can be served.

## Picking Up Orders

In many restaurants, a special call system is used to signal the wait staff that an order is ready. If not, the servers must use knowledge of approximate cooking times to estimate when the order will be ready. If possible, wait staff should pick up orders right from the broiler or griddle as soon as possible to ensure that customers receive their meal at acceptable serving temperatures.

Wait staff are often required to assemble orders. While orders are being filled, wait staff should gather accompaniments such as breads, relishes, juices, and serving equipment. As food items prepared in the kitchen are picked up, servers are often required to announce that the orders are being picked up. Cold foods should be picked up first and placed on the tray away from hot foods which are picked up second. Once the order is placed on the tray, garnishes can be added. If hot breads are to be served, these should be picked up last. Tea and coffee pots should be rinsed out with hot water before filling them with fresh hot beverages. Iced drinks should never be poured into warm glasses just as butter should not be placed on warm plates.



Prior to leaving the serving area, orders should be checked for correctness. Several different systems are used by restaurants for checking orders. Examples of systems include the following:

- The orders are checked against the duplicate order from the kitchen.
- The food checker checks the order and totals the items on the guest check.
- The announcer or floor chef announces that "Table number ______ has been picked up."
- The duplicate slip is removed from the rack.

All items ordered should be present, in the right quantity, and properly cooked. If not, the cook must be responsible for correcting the order. Hot foods should be hot and cold foods should be cold. Food should be attractively served with the proper garnishes. All the needed serving equipment should be on the tray. Wait staff should check the tray for spilled foods before delivering the items to the table. Some restaurants employ ***checkers*** to inspect each tray before it goes from the kitchen to the dining room.

### ◆ Essential Questions: ◆
### Food and Beverage Orders

1. What are the guidelines for taking orders from guests?
2. When writing orders, what are common abbreviations for cheeseburger, baked potato, milk, and a strawberry sundae?
3. What are four common methods for placing orders in the kitchen?
4. Why is it important for wait staff to know cooking times for menu items?
5. What are the guidelines for assembling food orders?

## SERVING FOOD AND BEVERAGES

The way food is served is important to most customers. Customers appreciate prompt, courteous service. Observing the general rules for serving food makes service easier and helps the customer know what to expect.

The style of table service used by the restaurant is developed to meet the particular needs of the menu and the customers. The basic styles of table service are frequently combined or adapted, and service personnel must learn to use the establishment's style of service.

Any style of service may be used in serving breakfast, lunch, or dinner. However, the order of service will vary for each meal.

### *Observing General Rules*

The general rules of table service are fairly simple. Once mastered, they apply to most styles of service and to any meal of the day.

When two or more persons are dining together, one must be served before the other. When a man and a woman are eating together, the woman is served first. When two couples are eating together, serve the lady on the host's right first, then the other lady, other gentleman, and the host. When three couples are eating together, serve the ladies on the right and left of the host, the gentlemen on the right and left of the hostess, then the hostess, and finally the host. When six or more people are eating together, serve the person on the host's right first and then serve the guests counterclockwise. If it is not apparent who is host or hostess, serve older persons before younger ones, ladies before gentlemen, and children after ladies.

The traditional guideline in table service is to serve from the left of the guest (with the left hand) and remove from the right (with the right hand). The first priority, however, is the convenience to the guest. Beverages are served and removed from the right because they are placed on the right side of the table setting, and the server should not reach across the guest. Bread and butter service and removal are likewise performed from the left. Therefore, the right way is what is convenient to the guest, and each establishment will decide how to serve guests most conveniently based upon its particular style of service.

When serving at a booth or banquette (sofa seat), the server should stand at one end, turn toward the guests on the right, and serve them with the left hand. Guests sitting next to the wall should be served first and guests sitting toward the outside should be served last. The server should then turn toward guests seated on the left and serve food with the right hand. Beverage glasses or cups may have to be picked up in order to refill them. Guests should be informed before the server reaches across the table. Wait staff who are performing these duties need to be cautious when guests attempt to assist with these tasks.

Dishes are placed on the table with four fingers of the hand under the lower edge and the thumb on the upper edge. Plates are then lowered into place and not slid into place.

When refilling drinks, servers should slide glasses to the edge of the table rather than lifting glasses straight up.

Everyone in the party should be served at the same time, and the place in front of a guest should not be left empty. One course should be followed by another as wait staff work quickly and quietly.

## Breakfast

Breakfast customers are often in a hurry. Many want coffee immediately. Appetites vary greatly in the morning. Some people want only coffee, some enjoy a very light breakfast, while others want a substantial meal.

At breakfast, it is especially important that the restaurant provide a clean, attractive atmosphere. Everything must be ready when customers arrive. The dining area should be kept clean throughout serving hours.

As soon as the breakfast guest is seated, water glasses are filled, menus presented, and hot coffee offered. Coffee is placed to the right of the teaspoons. Guests must be allowed a few minutes to make menu selections, after which the wait staff takes the order.

Breakfast is served in courses unless the guest asks that the whole order be served at once. If, however, fruit or juice is ordered, these are served first. Dishes or glasses on an underliner are placed in the center of the cover, and the fruit service dishes removed when the guest is finished.

If cereal is ordered, a cereal bowl is placed on an underliner in the center of the cover. Individual boxes of cereal are cut to make it easier for the guest to open. A pitcher of milk or cream is placed above the cover and left on the table. Water glasses and coffee cups should be refilled as needed. Cereal service should be removed by wait staff when guests are finished.

Breakfast plates of eggs, meat, or other hot food is placed in the center of the cover, toast plates to the left of the forks, and jam or a pitcher of syrup above the cover. Servers should ask guests if anything else is needed. Coffee cups and water glasses are refilled as needed and the breakfast and bread plates removed when guests are finished.

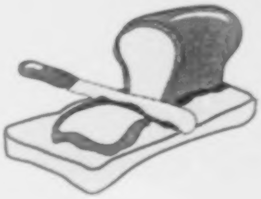
Sales checks should be placed face down, to the right of the cover, or presented on a clean change tray. After guests place payment on the tray or on the table and in sight, wait staff should either bring the check or money to the cashier for the guests, or direct guests to pay the cashier directly. If payment is brought by the wait staff to the cashier, the wait staff should return any change to guests on small change trays.

## ***Lunch***

Lunch menus need to consider speed of service, simplicity in courses offered, and enough variety for customers. Lunch can vary from a quick meal of soup, salad, or sandwich to a leisurely meal served in courses. The pace of service must be adjusted to the type of meal served. Office workers and students may want a quick meal. Shoppers and business persons may prefer a more leisurely meal.

After lunch guests are seated, they should be presented with the menu and offered a glass of iced water. When guests have had time to make their selections, wait staff may record the orders. Butter, butter plates, and bread should be placed on the table. Hot beverage cups and saucers are placed to the right of the cover and cream placed above the cups. Individual beverage pots are placed above and a little to the right of cups and saucers, while cold beverages are placed to the right and a little below water glasses.

If an appetizer, soup, or salad is ordered as a separate course, it is placed in the center of the cover on an underliner, and cracker baskets are placed to the left of the forks. When guests are finished, the first service is removed.



The main dish is served and placed in the center of the cover; individual salads are served with the main course and placed to the left of the forks, and other side dishes served and placed above the entrée. Trays or baskets of bread and rolls are placed to the left of the salad or near the middle of the table, and hot or cold beverages to the right below the water glasses. When guests are finished, the main course service is removed. Crumbs are brushed from the table at this time if necessary.

Dessert is placed in the center of the cover and the dessert flatware in the correct position. If forks are needed, servers should place them on the left side; if spoons are needed, they are placed on the right side. Coffee is offered and served at this time. When guests finish, wait staff should remove both dessert dishes and flatware.

The water glass, napkin, and coffee service are left on the table, and the check placed face down on the table on a small change tray to the right of the host's cover. After guests leave, tables must be cleaned and reset as directed.

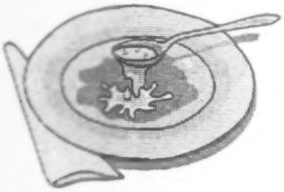
## ***Dinner***

Dinner is usually the most formal and leisurely meal of the day. Even so, service personnel must still be alert to the needs of guests. Requests should receive prompt responses. Each course should be served promptly.

Unless the greeter has already presented the menus, the wait staff should place the opened menu before each guest from the left side and fill iced water glasses. When guests have had time to make their selections, wait staff can write down orders accurately. Bread, butter, and relish are then placed on the table if this is the practice of the establishment.

Appetizers are served from the left and placed in the center of the cover. When guests have finished, first course dishes should be removed.

Soup courses are generally served from the left and placed in the center of the cover. Crackers should be offered from the left of the cover or placed to the left. When guests have finished, the soup service is removed.



If the salad is served as a separate course either before or after the entrée, the salad plate is placed in the center of the cover and the salad fork to the left. Bread and butter is served at this time if it is the practice of the establishment. When guests finish their salads, the salad service is removed.

The entrée may now be served. Different ways to serve entrees are mentioned below:

- If plate service is used, serve the filled dinner plate from the left and place it in the center of the cover with the entrée closest to the guest.
- If the entrée is served on a platter or in a casserole, place it directly above the cover with the serving flatware to the right of the platter or casserole. Place the warmed dinner plate (from the left) in the center of the cover.
- If the entree is to be served, place the empty plate in the center of the cover and serve from a platter.
- If guests serve themselves, present the platter on the left side with serving utensils on the right side of the platter and the handles toward the guest.

The beverage is placed to the right of the teaspoons. Rolls and breads are offered to guests and placed in the center of the table. Iced water and coffee cups should be refilled by wait staff as needed. When guests have finished, wait staff should remove the main course dishes in the following order:

1. platter, relish dish, and condiments
2. dinner plate, salad plate, bread and butter plate, and vegetable dish
3. empty beverage glasses
4. extra flatware

Wait staff should proceed to remove crumbs from the table if this is part of the establishment's procedures.

The dessert is served from the left side and placed in the center of the cover. Flatware is placed in the appropriate positions. Wait staff should offer to refill hot coffee, demitasse, or other beverages as desired by guests.

The check is placed face down on the table or on a small change tray to the right of the host. Wait staff should accept the customer's payment or indicate where the bill is to be paid. If wait staff bring the payments and checks to the cashier for guests, change should be returned to guests on a small change tray.

◆ **Essential Questions:** ◆
**Serving Food and Beverages**

1. What are the general rules for the order of serving seated guests?
2. What food and beverage items are traditionally served from the left? From the right?
3. What are the general rules for refilling beverages for seated guests?
4. What guidelines should be followed for serving guests at a booth or banquette (sofa seat)?
5. What are the general rules for serving breakfast? lunch? dinner?

## CLEARING THE TABLE

Servers should remove dishes only after all guests at a table have completed one course. Wait staff should never scrape or stack dishes in front of guests.

Waitpersons should clear dishes from the right side using the right hand unless doing so will inconvenience a guest. Reaching across a guest to serve food or clear dishes is not acceptable except when serving at a booth or banquette.

In most cases it is best to wait until guests leave before clearing and resetting the table. However, some meals include several courses which require clearing the table while guests are still seated at the table. Prior to serving additional courses, servers should wait for all members of the party to complete the existing course. Empty dishes should then be removed.

After guests complete dessert, serviceware is removed. The remainder of the table can be cleared after guests have departed.

◆ **Essential Questions:** ◆
**Clearing the Table**

1. What are the proper procedures for clearing the table after guests have finished their meals?
2. What is the guideline for removing existing dishes between courses?

## Chapter Highlights

- Customer complaints are decreased with well-trained wait staff.
- In table service, food is served to the customer by a waitperson. The customer may be seated at either tables or booths.
- Table-service restaurants may offer limited to extensive menu choices. The restaurants may be located in specially designed buildings, office buildings, department stores, shopping centers, ships, or trains. They may offer other types of service in addition to table service.
- In most table-service restaurants, the guests' first contact is with the head waitperson, maitre d'hotel, or host/hostess who greets them and escorts them to a table. Occasionally waitpersons may perform this function.
- Menus should be presented to guests from the left. Menus may be either opened or closed (upon presentation) depending upon the policy of the establishment. When serving a group, menus should be presented beginning with the person to the right of the host/hostess and proceeding counterclockwise around the table.
- When taking an order, address the man if the party is a couple. Address the older person if the party is two people of the same sex, and if one is not clearly the host. In larger groups, address the host. If the establishment's policy permits, always ask large groups if they want separate checks. Take orders from each guest, proceeding clockwise or around the table from the host/hostess.
- Write orders clearly according to the establishment's policy. Use abbreviations common to the restaurant where you work. If a common system of abbreviations is not established, develop a system from a standard list.
- Each restaurant has its own method for placing the order with the kitchen staff. Four commonly used methods are: the wait staff calls in the order; written orders are placed on a spindle; a designated kitchen employee reads the order aloud; or the waitperson punches the order in on a computerized ordering device.
- The wait staff should know the preparation time required by each food and be able to time orders and service effectively.

## Chapter Highlights, Cont'd.

- Orders should be assembled and inspected before being served.
- Service personnel must learn to use the establishment's style of service.
- General rules of table service that apply to most styles of service and to any meal of the day should be mastered. These rules apply to the order in which guests are served, the side from which guests are served foods and beverages, the order and side from which courses are removed, how to hold plates and glasses when serving, and how to serve at booths or banquettes.
- The order of service will vary for breakfast, lunch, and dinner.

# Chapter 6

## Sidework

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

10A Describe roles and responsibilities in foodservice operations.

10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.

10E Perform appropriate tasks in foodservice according to industry standards.

### Chapter Vocabulary

- booster stand
- flatware
- glassware
- litter picker
- mechanical impact
- place setting
- plateware
- portion packs
- service duties
- service stand
- serviceware
- side stand
- sidework
- table setting
- tabletop
- thermal shock
- work station

***Sidework*** includes all of the duties assigned to foodservice personnel in addition to ***service duties*** (duties performed during serving hours). Responsibilities for sidework duties are shared by service personnel. An assigned work area, usually a certain number of tables or counter stools, is called a ***work station.***

The overall responsibility for the dining room belongs to the head waitperson, the captain, the host/hostess, or a manager. In some foodservice establishments, the work of cleaning, preparing, and maintaining the dining room may be divided equally and rotated among all service personnel. In other establishments, a single individual may be responsible for completing one task in all areas of the dining room. In many restaurants, a dining room attendant (busperson) is assigned to work with a waitperson in serving a work station. In this case, routines may be divided.

## SIDEWORK ROUTINES

Sidework includes duties assigned before and after serving hours as well as duties performed during serving hours. Routines vary depending on the size of the business, the number of employees, the meals served, and the type of service.

Preparation of the dining room for the arrival of customers starts the evening before, at the close of business. It continues in the morning before the first meal. Responsibilities for preparing the dining room for the arrival of customers are called closing duties and opening duties.

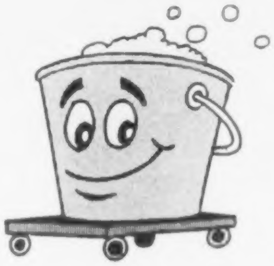
### Opening Duties

Opening duties (preservice duties) are performed at the beginning of the day or shift. Lights and necessary electrical or gas appliances, such as urns and toasters, are turned on. The ventilation system is adjusted.

Cleaning as a sidework duty usually is done before the first meal of the day. Such cleaning includes dusting walls, curtains, and furniture; polishing furniture; cleaning mirrors and glass shelves; and, sweeping or vacuuming floors.

The cleaning responsibilities of service personnel may also include sweeping the outside entry and sidewalk and picking up trash in the parking lot. Outside areas are the first and most frequently viewed areas of any establishment. Porches and sidewalks should be swept weekly, or even more often, if needed. A push broom or deck broom is best for outdoor sweeping. Trash should be removed from the grounds and parking lots on a daily basis. Employees should watch carefully for broken glass, sharp pieces of metal, sharp sticks, sharp rocks, and other objects which might be hazardous to incoming guests. A canvas bag and a **litter picker** (a stick, like a broom handle, with a metal spike in one end) keep these policy procedures from becoming a back-breaking chore.

Opening duties include inspecting dishes, glasses, and flatware. In some establishments, glassware and flatware are polished by hand. Other service articles, such as serving carts, napkin dispensers, straw holders, and condiment stands, should also be cleaned before the first meal of the day. Tables, chairs, countertops, and stools should be checked for alignment and cleanliness. Wobbly tables can be balanced by rotating the table itself or by placing a piece of cork under the table leg that is causing the unevenness.



Tables must be properly set with clean linen or place mats, flatware, dishes, and glassware. Salt and pepper shakers, sugar bowls, napkin dispensers, and ashtrays must be checked to be sure they are clean and ready for use. Sugar bowls, salt and pepper shakers, and condiment containers should be filled. These table items are then placed on tables or counters. If real flowers are used, they should be checked for freshness and placed on tables. Appropriate menus must be clean, presentable, and ready for use.

One of the most important duties of dining room preparation is stocking the service stand. A **service stand**, sometimes referred to as a bus station, is the area that contains the supplies needed in the dining room. The stand is located near the work station or between the station and the kitchen. Two types of service stands are used, the side stand and the booster stand.

A ***side stand*** is a cabinet standing against a wall of the dining room or against a wall of the pantry that contains supplies needed during meal service. The side stand may be either open or closed. The open side stand displays all the articles it contains, making it easy to use. Because its contents are visible, an orderly and tidy appearance must be maintained. The closed side stand covers its contents with doors or puts them in drawers, making the side stand more attractive, but less efficient.

A ***booster stand*** serves the same function as the side stand, but is located in the center of the room. Some booster stands also double as pantries. They contain storage drawers, cupboards, an ice machine, and cabinets for holding warm breads. They have electrical outlets and running water.

The well-equipped service stand saves many trips to the kitchen. Service stands must be stocked before serving hours if they are to be of maximum use. The stand should be stocked with dishes, glasses, flatware, napkins, place mats, linens, towels, paper supplies, trays, ice, water, beverages, butter, condiments, tip trays, and carts or containers for soiled dishes. The supply of cups, glasses, plates, and flatware should be checked before each meal. If the service stand contains a warming unit, it should be checked to see that it is working properly.

Before service begins, the service stand is stocked with food items. Ice bins should be filled, coffee prepared, and creamers filled. Syrup pitchers, relish dishes, and sauce and condiment containers should also be filled. Necessary food items, such as doughnuts, pastries, and rolls, should be brought from the kitchen.

After opening responsibilities are completed, dining room personnel should quickly check their personal appearance before customers begin to arrive. Service personnel should be clean and neat. Uniforms should be fresh. Good grooming is essential and a smile is a must.

## Closing Duties

Closing duties involve cleaning the dining room and putting everything in its proper place. Tables are cleared of dishes, flatware, and table coverings. Dishes, glassware, and flatware should be appropriately stored and tables, chairs, and other surfaces cleaned. If tables are not to be reset, chairs should be placed with the seats resting on the table. If tables are to be reset, the appropriate setting for the next meal is used.

Containers should be cleaned and perishable foods properly stored. Salt and pepper shakers, sugar bowls, and other condiment containers should be collected on trays for cleaning and refilling. Water pitchers and ice buckets should be emptied, washed, and placed (bottoms up) to dry. Ashtrays, coffee pots, coffee urns, and dispensers for milk or cream should be washed, and perishables like butter, bread, and baked goods should be properly stored. Flowers, if still usable, should be stored in the walk-in refrigerator away from food items and preferably on the bottom shelf.

Side stands and booster stands should be cleaned. Electrical appliances should be disconnected and gas equipment turned down or shut off, depending on whether it is the end of the shift or the end of the day. Items, such as matches, toothpicks, single-service napkins, dishes, cups, and flatware, should be re-stocked. For security, cabinets, pantries, and refrigerators may be locked.

Heavy cleaning of the dining area is usually done after the close of business or before the first meal of the day. Heavy cleaning is often the responsibility of a specialized cleaning crew. The cleaning crew may be part of the operation's staff or outside contract cleaners. Floors should be cleaned, walls and windows washed when necessary, and garbage removed. Any rearrangement of tables, buffet tables, or special displays should also be done at this time.

### During Serving Hours

Sidework does not end with the opening of the establishment for business. Service stand supplies must be continually replenished. Service personnel should continuously check the service stand for supplies that are getting low, for containers that need cleaning or refilling, and for an orderly appearance. During serving hours, items in the service stand can be replenished when returning from the kitchen. The service stand should be kept neat and clean at all times.

The stand can be rearranged and re-stocked while service personnel are not busy serving guests. During slack periods, sidework duties, such as folding napkins, cleaning and filling condiment containers, and cleaning ashtrays, may be done.

During serving hours, tables must be cleaned and reset as needed. Dirty dishes should be removed from tables as quietly and quickly as possible. Condiment containers should be checked for cleanliness and washed or wiped down as needed. Tables and chairs should be wiped with properly prepared cleaning solutions. Food and beverage spills on the floor should be cleaned up immediately to prevent slips and falls. Tables should be reset with clean linens, dishes, flatware, and glassware.

**Duties.** Major sidework duties include managing service stands, inspecting, cleaning, and polishing serviceware, setting and resetting tables, and cleaning the dining room. Knowing how to perform these duties is important for all service personnel.

**◆ Essential Questions: ◆**
**Sidework Routines**

1. What types of tasks does sidework include?
2. What are typical opening duties? closing duties?
3. Why is sidework important to the success of the foodservice operation?

## WORK AREA DUTIES

### Work Station and Service Stand

One of the most important responsibilities of service personnel is managing service stands in the dining room. Before serving hours begin, each service stand should be stocked with needed supplies and food items. A checklist of items and amounts needed may be posted at each service station to serve as a guide. If menus vary, special requirements of the day's menus should also be checked. During serving hours, service stand supplies should be re-stocked as needed.

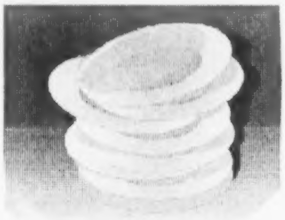
### Tabletop

***Tabletop*** includes a variety of accessories such as salt and pepper shakers, candle holder, flower vase, ashtray, sugar, and creamer, in addition to the basic table setting.

Service personnel should avoid overcrowding these items. Tabletops vary according to the foodservice establishment and type of service. A ***place setting*** is a setting of plateware, glassware, and flatware for one person. A ***table setting*** includes the place mat or tablecloth and napkin in addition to the place setting.

## Serviceware

All ***serviceware*** (plateware, glassware, and flatware) returned from the dish room should be inspected carefully for cleanliness and appearance. Items that are not clean should be returned to the dish room. ***Plateware*** (dinnerware or china) includes the dishes for serving food and hot beverages (bowls, plates, salad plates, bread plates, cups and saucers). ***Glassware*** are the containers of various sizes and shapes, such as tumblers, stemware, mugs, or footed glasses, used for serving water or other beverages. Many casual restaurants use plastic glassware and more formal restaurants often use crystal instead of glass. ***Flatware*** (silverware or utensils) includes the various sizes of forks, knives, and spoons used in foodservice and may be made of stainless steel, silverplate, or sterling silver.



**Plateware.** Plateware should be inspected for cleanliness and without chips or streaks. Service personnel should check for lipstick stains on cups. Dirty plateware should be returned to the dish room and streaked plateware should be wiped with a clean, moist cloth. Chipped or cracked plateware should be removed and reported to the management.

**Glassware.** Glassware should be checked for cleanliness, especially for lipstick stains. Dirty glasses should be returned to the dish room. In hard water areas, glasses may have to be dipped in warm water then dried with a linen cloth or a special glass polishing cloth to remove water spots. Plain cotton towels are unsatisfactory as they leave fibers on the glasses. Proper use of glass washing equipment may eliminate this chore.

**Flatware.** Flatware should be inspected for cleanliness. Service personnel should check between the tines of forks for food which was not removed by washing. Any dirty flatware should be returned to the dish room. If flatware has been properly soaked and washed, daily polishing should be unnecessary. Special cleaning machines for flatware also eliminate the need for all but occasional polishing. For convenience, individual items of flatware should be stored separately.

When polishing by hand is necessary, clean flatware is polished with a cleaning compound. The compound is removed with a moist cloth. Then the flatware is polished to a high sheen with a soft dry cloth. The flatware should then be dipped again in hot water and polished dry.

**Service Articles.** The cleaning and polishing of other service articles is also the responsibility of dining room personnel. Napkin dispensers, straw holders, pitchers, condiment stands, condiment containers, and serving carts all require cleaning and polishing.

In hard water areas, glass containers require special treatment. Use of a commercial agent is necessary for removing lime and calcium deposits. Directions for using these products must be carefully followed. The container must be rewashed after use of the agent.

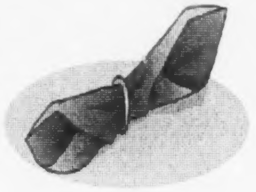
Stainless steel should be cleaned daily with a stainless steel detergent and should be treated weekly with a cleaning agent appropriate for the prevention of the build-up of haze and film.

Plastic items can be cleaned with a metal polish. Painted items like napkin dispensers can be washed in lukewarm water with mild soap. These items should be repainted before they become unsightly. Spray paints would be acceptable for this.

## Setting and Resetting Tables

Setting and resetting tables are important sidework duties. Having tables properly set before customers arrive speeds table service. Efficiency in clearing and resetting tables keeps the dining room attractive. With efficiency, it is possible to serve more customers during the serving period.

**Setting.** Before the first customer arrives for any meal, tables and counters should be set appropriately. Clean linens or place mats should be used. Tabletop items should be placed, filled, and cleaned as directed. Individual covers should be set appropriately for the meal. If regularly used, fresh flowers should be placed on each table. Finally, tables should be inspected to be sure each is set properly.



**Clearing.** As customers finish their meals and leave, tables must be reset as quickly and quietly as possible. The first step is to clear the table of dirty plateware, glassware, and flatware. Glassware, flatware, and plateware are removed in an orderly manner. Glassware should be picked up by the base, utensils by the handles, and plates by the rim. This practice helps protect employees from any diseases or illnesses that customers may have. Complete covers may be carried to the nearest bus stand or service stand. A bus cart or pan reduces the number of trips necessary to clear a table.

Efficient use of a bus pan or tub requires organization. Plates should not be scraped in view of customers. Plates that cannot be stacked because there is food on them should be placed aside. Plates, saucers, cups, and papers should be stacked in one bus pan. Breakage of plates can be avoided by stacking plates at reasonably low heights. Paper goods should be placed to one side. A separate pan should be used for glassware and flatware. Glasses or coffee cups should not be stacked inside one another. Glasses can become firmly stuck together and stacked cups tip over easily. As many similar pieces should be put together as possible to save time and work in the dish room. Organized bus pans can be unloaded easily and quickly.

Glass breakage occurs due to either mechanical impact or thermal shock. ***Mechanical impact*** causes tiny cracks that lead to breakage at another time. ***Thermal shock*** refers to extreme temperature changes that lead to breakage, such as filling a clean, hot glass right out of the dishwasher with ice or a cold beverage.

After clearing a table, it should be wiped clean with a service towel used only for table tops. These service towels should be stored in a clean sanitizing solution when not in use. A second dry towel should be used for wiping seats in booths or on chairs. Crumbs should be wiped into the service worker's hand, or onto a plate, not onto the floor. Ashtrays should be wiped out with a moist service towel or disposable napkin. If there is difficulty getting an ashtray clean, it should be replaced with a clean one, and the stained ashtray should be returned to the dish room.

**Resetting.** Service personnel should reset tables without disturbing nearby guests. Mats or tablecloths should be replaced. If possible, the tablecloths should be changed without completely baring the table. To accomplish this, table accessories are moved to one side of the soiled cloth. The empty side of the cloth is folded almost to the accessories.

The fresh tablecloth is then placed on the bare side of the table. The fresh cloth is unfolded almost to the accessories, after which the accessories are moved to the other side of the table onto the clean cloth. The soiled cloth is then removed. The fresh cloth is unfolded and the individual covers reset as appropriate for meals served. Serviceware is always handled without touching food contact surfaces.

## *Cleaning the Dining Room*

General cleaning duties in the dining room include dusting, cleaning, sweeping, and vacuuming. These tasks are usually done before the establishment opens for business.

**Dusting Furniture, Walls, and Curtains.** Dusting is done either prior to vacuuming or following sweeping with a broom (sweeping with a broom may throw up dust). Walls and curtains should be thoroughly dusted using a vacuum cleaner brush or whisk broom. Chairs and other furniture should be dusted and polished, and upholstered furnishings should be brushed or vacuumed frequently to remove surface dust.

A square yard of cloth folded to a 9-inch square may be used for dusting. As the cloth becomes soiled, it should be turned over to a clean side or refolded to a clean side. Folded in this manner, the cloth will have thirty-two usable surfaces. Whenever possible, a cloth should be used in each hand to dust with both hands in order to save time and energy. All dusting should begin at the entranceway of the facility and continue by working around the room. High surfaces should be dusted prior to lower surfaces, working in a downward fashion. Long straight strokes are recommended. Objects must be moved in order to dust under them. Light objects may be picked up with one hand, dusting the surface under them with the other hand, and replacing them back onto the surface immediately. Special attention should be paid to smudges, oily spots, and streaks. Dusting should be done underneath and behind furniture, and all work should be inspected.

A treated dust cloth may be used to keep dust from scattering. Dusting oil or polish is poured onto the cloth rather than on the surface to be polished. These cloths may be retreated or discarded; however, oily cloths are a fire hazard and they must be stored in a fireproof container with an opening for air circulation.

A damp cloth wrung out of sudsy water is useful for some dusting, such as window sills, TV screens, and washable lamp shades. Wooden tables may be wiped with a cloth dampened in warm water, then polished with wax. Damp cloths may be used to dust plastic and laminated surfaces. Wooden chairs should be wiped frequently with vinegar and water and should also be waxed periodically.

Mirrors, glass shelves, and glass displays should be dusted thoroughly and cleaned regularly. Glass-top tables should be wiped with a damp cloth, then rubbed with a clean, dry cloth.

**Dusting Floors.** Hard-surface floors are dusted or swept using a dry, treated dust mop. Furniture should be moved as necessary. Dusting or sweeping should be started at one end of the dining area and finished at the doorway. The dust mop is pushed ahead in a straight line lifting the dust mop at the end of each stroke (without tapping the mop on the floor). Each stroke should overlap the previous stroke. Dusting is best done in parallel lines until the entire floor area is cleaned. Cleaning is done under all stationary equipment and furniture. Dirt which has been gathered by the doorway may be collected in a dustpan with a counter brush and placed in a plastic lined trash can. Floors should then be inspected for dust streaks prior to replacing any furniture which was moved. Floor sweeping and dusting equipment should be properly cleaned and returned to its designated storage area.

**Vacuuming.** To vacuum carpeted floors, the following steps should be followed:

1. Assemble the vacuum cleaner.
2. Start in the farthest corner of the room or floor area.
3. Use a back-and-forth motion while vacuuming.
4. Move furniture, if necessary.
5. Continue until the entire floor area is completed.
6. Replace any furniture moved during vacuuming.
7. Empty and clean the vacuum as directed.
8. Return the vacuum cleaner to the assigned storage area.

◆ ***Essential Questions:*** ◆
***Work Area Duties***

1. Why is managing service stands in the dining room important?
2. What is the difference between plateware, glassware, and flatware?
3. What are all of the components of a table setting?
4. What procedures and equipment should be used for clearing tables quickly and quietly?

## EQUIPMENT AND SUPPLIES USED IN SIDEWORK

The supplies needed by dining room personnel during serving hours are kept in the service stand. Supplies needed for cleaning and setting tables include dishes, glasses, flatware, ashtrays, flower vases, linens, cleaning cloths, and towels. Items needed for serving food include bread baskets, tongs, serving utensils, and containers. Single-service items include paper place mats, paper napkins, doilies, coasters, straws, matches, toothpicks, and plastic eating utensils. These supplies should be counted and brought back to set inventory levels before service begins. All supplies should be stored in an organized manner where they are easy to obtain when needed.

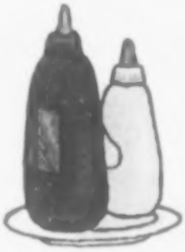
Strict control over linens must be maintained to ensure that sufficient supplies are always on hand. Soiled napkins and tablecloths should be counted daily and the count recorded in an inventory book. Clean, unused linens also are counted and the count recorded. The linens should be checked for tears and difficult stains before they are sent to be laundered. When clean linens are returned, their count is recorded under unused linens. Rotating linens ensures that all linens are fresh and the same color.

Each waitperson is responsible for obtaining and organizing personal equipment needed during serving hours. The most important items are a supply of guest checks and two good ink pens. Other items of personal equipment include service cloths, matches, a bottle opener, a corkscrew, a small pen light flashlight, and a crumb sweeper.

## Food Items

The food items needed at the service stand include garnishes and condiments, accompaniments, ice, beverages, dinner salads, breads, pastries, cakes, and desserts. Service personnel are responsible for stocking the service stand with these items.

Preparation of garnishes and condiments is a traditional part of dining room personnel sidework duties. Garnishes such as lemons, parsley, and watercress require little preparation. Lemons are usually cut into wedges. Parsley and watercress are washed, drained, separated, and placed on ice until needed. Dining room personnel may portion items such as coleslaw and potato salad into individual service cups.



Condiments and sauces are served in bottles, serving containers, or individual portions. If bottles or serving containers are used, service personnel are responsible for keeping the containers clean and filled. Service personnel may portion condiments and sauces into single-service plastic or paper cups. Tartar sauce, cocktail sauce, ketchup, and mustard may be portioned in this manner.

Many establishments use ***portion packs***, which are pre-portioned single-service containers of condiments, sauces, and accompaniments. Portioned jams, mustards, salad dressings, relishes, sugar, sugar substitute, and salt and pepper are frequently used. Accompaniments, such as crackers and chips, may also be pre-portioned. Butter may be purchased in chips or pats. These items should be served at appropriate times and positioned attractively.

A supply of ice is needed in the service stand. If the stand is not equipped with an ice machine, an ice bucket should be filled and placed in the stand before service begins. The ice must be replenished as needed throughout serving hours.

Dining room personnel often prepare beverages, such as iced water, breakfast juices, coffee, tea, hot chocolate or cocoa, and fountain specialties. Often, dairy beverages and frozen desserts are prepared by dining room personnel. Items such as these are often referred to as fountain specialties.

Breads, pastries, cakes, and some desserts may be kept in the service stand. Bread warmers should be filled before serving hours. Pastries, cakes, and any desserts to be served in the dining room should be brought out from the kitchen. Pastries, cakes, and desserts may be displayed on a dessert cart.

### ◆ Essential Questions: ◆ Equipment and Supplies Used in Sidework

1. What supplies are kept at the service stand?
2. What are the procedures for handling linens?
3. What personal equipment is needed by foodservice personnel during serving hours?
4. What food items are typically kept at the service stand?

## Chapter Highlights

- Sidework includes all of the duties assigned to service personnel in addition to service duties (duties performed during serving hours).
- An assigned work area is called a station.
- A service stand is the area that contains the supplies needed in the dining room. Two types of service stands are the side and the booster stand.
- Sidework responsibilities for preparing the dining room for the arrival of customers are called closing duties and opening duties. Other sidework duties are performed during service hours.
- Major sidework duties include managing the service stand; inspecting, cleaning, and polishing serviceware; setting and resetting tables; and cleaning the dining room.
- Service personnel should check their personal appearance before guests begin to arrive.
- All supplies in the service stand should be inventoried regularly and stored in an organized manner where they are easy to obtain as needed.
- Food items needed at the service stand include garnishes, condiments, accompaniments, ice, beverages, breads, pastries, cakes, and desserts.
- As serviceware is returned from the dish room it should be inspected carefully for cleanliness and appearance. Items that are not clean should be returned to the dish room. Glassware and flatware may need to be polished.
- Tables and counters should be set appropriately before the first customer arrives. As customers finish their meals and leave, tables must be reset quickly and quietly.
- Appropriate use of a bus cart or pan reduces the time needed to clean tables.
- General cleaning duties usually performed by service personnel include dusting furniture, dusting hard-surface floors, and vacuuming carpeted floors.

# Chapter 7

## Counter Service and Self-Service

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

4B Describe forms of service utilized in foodservice establishments for presenting food to guests.

7G Use appropriate terminology related to the food production and service industry.

10A Describe roles and responsibilities in foodservice operations.

10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.

10E Perform appropriate tasks in foodservice according to industry standards.

10G Apply available technology in foodservice.

### Chapter Vocabulary

automat
automated self- service
buffet service
cafeteria service
counter service
drive-thru pick-up
quick-service restaurants
runners/supply workers
self-service
self-service restaurants
self-sufficient back bar
take-out service
vending machines

Many foodservice customers want a modestly priced meal and quick service. ***Quick-service restaurants*** meet the needs of these customers by providing counter, tray, or self-service. Counter, tray, and self-service are usually inexpensive and informal styles of service. They allow for rapid service with a minimum of assigned workers.

***Counter service*** features easy-to-prepare meals, short orders, prepackaged foods, and fountain items. Counter service is used in snack bars, fountain-grill services, coffee shops, drive-ins, and diners. Food may be packaged, served on trays, or served at a counter to guests seated on stools. Packaged food and food served on trays are taken by the customer to tables to be eaten. Counter service is especially popular for breakfast, lunch, snacks, and coffee breaks. Customers can order, get their food, and eat quickly.

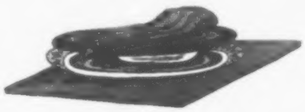
***Self-service*** may be divided into cafeteria, buffet, takeout service, and automated self-service. ***Cafeteria service*** allows guests to select food displayed at service counters and assemble their selections on trays. Cafeterias are especially popular in business districts. ***Buffet service*** offers food on a table or buffet for self-service or to be served by an attendant. Sometimes a broiler is used behind the buffet. ***Takeout service*** allows customers to "take out" food items or complete meals. Food orders are placed at a counter window, over an automated ordering machine, or by phone. Orders are picked up at a pick up counter, drive-up window, or delivered. ***Drive-thru pick up*** service is popular with fast food restaurants. Service to the customer is quick. The customer drives through a special lane, selects the menu items from a large menu board outside and their order is taken through a speaker box. The order is then picked up at the dispensing window. ***Automated self-service*** uses vending machines to serve the food.

## COUNTER SERVICE

Counter service is less complicated than table service. The primary differences are that the orders are shorter, the service is quicker, and guests are served face to face. In addition to service duties, counter workers operate beverage dispensers, make coffee and tea, prepare food, and may run the cash register as well.

### Preparing the Counter

Before serving hours begin, the counter worker checks supplies and re-stocks as needed. All necessary supplies and some food items are kept beneath the counter. The worker also washes any dishes, glassware, flatware, or serving utensils that might be left from an earlier shift. Napkins, menus, condiments, and other foods are arranged neatly on top of the counter. Covers are set at each place along the counter. Covers usually include a place mat, flatware, and a napkin.



### Taking and Relaying Counter Orders

Guests should be greeted to acknowledge their presence. Guests are seated at the counter, a glass of water is usually brought, and the menu is presented. The individual cover has already been laid. Sugar containers, salt and pepper shakers, ketchup bottles, and other condiment containers remain on the counter throughout serving hours. Ashtrays are placed within easy reach of customers only in designated smoking areas.

Counters for seated service may be in a straight line, a U-shape, or curved. They are equipped with a back bar for cooking and serving. Counter workers design the counter for easy access.

Guests are served in turn as they come to the counter. Either menu boards or printed menus are used for customers to make their selections. The counter person takes the order on a pad or computer screen and the preparation of the order begins usually behind the counter.

Payment for the food order is received at the time the order is placed. The order is packaged and placed on a tray ready for customer to pick up.

Order pads usually list each food or beverage on the menu. Numbers are used to indicate quantities. Letter abbreviations are used to provide instructions for preparing and assembling orders. For example, a drink order might use the letter "S" to indicate "small." Each establishment will have its own system.

The order is filled by the counter worker, or by the food preparation personnel. The ticket is called out, attached to the carousel, or passed to the kitchen through a window.

## Preparing Food for Counter Service

Counter service personnel may do some or all of the food preparation. When all of the food preparation is done at the back bar, the unit is called a ***self-sufficient back bar***. A self-sufficient unit includes all of the equipment needed for food preparation and dishwashing. Easy-to-prepare meals, short orders, prepackaged foods, and fountain items are usually featured. Food and beverages are prepared and assembled at a back bar in view of the customer.

In some establishments, food items may be prepared by food preparation personnel in a separate kitchen. When a separate kitchen is used, fewer prepared foods may be used. The kitchen is usually connected to the counter area by a pass-through window. When food is prepared in the kitchen, the back bar is used for serving.

Most counter workers have some food preparation responsibilities. Preparation responsibilities often include making coffee and tea; dispensing milk, juice, and soft drinks; preparing ice cream drinks and desserts; serving soups; and making sandwiches. The assigned items should be prepared, portioned, and served according to the establishment's policy.

The food preparation responsibilities of counter workers are varied. Counter workers may operate equipment ranging from mixers to toasters. Workers need to be thoroughly familiar with the equipment they use.

Sanitation is extremely important. It is especially important that the areas be kept spotless and neat at all times, not only for sanitation reasons, but also because customers can see everything behind the counter. Counter workers handle more individual food items than most service personnel. Special care should be taken not to touch food with bare hands. Serving forks or tongs should be used whenever possible. Extra attention should be paid to personal hygiene.

## Serving Food at the Counter

Orders to be eaten at tables on the premises are usually assembled on trays. As orders are assembled, they should be checked for accuracy. Similar items should be marked by the service personnel for easy identification by the customer. For example, drink flavors may be indicated on lids.

Food to be eaten at the counter is served using American or plate service. All necessary supplies and some food items are located beneath the counter. Orders are assembled on the back bar. In some operations the counter worker is responsible for table service as well as counter service. The check is placed face down in front of the customer as soon as the order is completed. The same person should not handle both food and money.

The counter worker is responsible for busing. Because of space limitations, dishes should be cleared and reset as soon as guests are finished. Even if disposables are used, tables must be cleared and wiped as needed.

Spills should be wiped up immediately, with special attention being paid to the floor behind the counter. The area beneath the counter and the back bar must be kept neat and clean at all times. Dishes, glassware, and flatware should be washed or taken to the kitchen for washing. Disposables should be discarded in sanitary waste containers.

◆ ***Essential Questions:*** ◆
**Counter Service**

1. What are five types of foodservice operations that use counter service?
2. What duties do counter workers perform in addition to service duties?
3. What tasks must be performed to prepare a counter for service?
4. What are the features of a self-sufficient back bar?
5. Why is sanitation so important for counter services?

## SELF-SERVICE

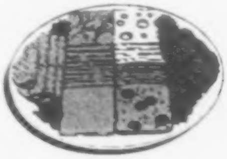
### *Self-Service: Cafeteria*

***Self-service restaurants*** are able to provide food items quickly. Customers provide part or all of the service provided in table service for them. Two types of cafeterias are as follows:

1. Traditional in which employees are stationed behind the counter and
2. The scramble system or hollow square in which separate areas of the counter serve different menu items, such as hot foods, salads, sandwiches and desserts. The advantage of the scramble system is that the customer does not have to wait in the traditional cafeteria line.

In a cafeteria, customers serve themselves except for certain foods. Cafeteria counter workers usually serve soups, meats, and vegetables requested by the customer. The cafeteria counter must be well-stocked throughout serving hours so the line does not slow down.

**Preparing the Cafeteria Counter.** Before serving hours begin, workers must prepare the counters for service. Glass shelves, metal surfaces, and counter tops should be polished. Supplies of trays, napkins, and flatware should be replenished. Supply tables and shelves should be neatly arranged. Relishes, condiments, and pre-packaged food items should be assembled in the proper location. Cold pans or tables, and the steam table and hot counters, should be prepared. An adequate supply of dishes and serving utensils should be assembled. Hot and cold beverages should be prepared. Hot foods, salads, desserts, breads, and beverages should be attractively displayed, and some foods may be prepared by the cafeteria counter worker.



When displaying entrées, slices of meat should be overlapped, meatballs should be placed in straight rows, and meat loaves should be placed in the center of the pan. Garnishes should be arranged attractively among the food to make it more appetizing. Appropriate serving equipment and plates or serving dishes should be placed in convenient locations.

When arranging salads, similar ones should be together. Grouping helps the customer make a selection. Salads should be arranged to contrast in color. An arrangement of coleslaw next to potato salad and cucumber salad lacks appeal. To make a more attractive arrangement, slices of tomatoes or other colorful foods can be placed between the lighter colored salads. Plates of the same size should be arranged in a row. A row of salads in bowls can be used to separate two rows of plates. Rows of gelatin can be alternated with rows of sliced fruits or vegetables to add variety in height and shape.

The appearance of the dessert counter is as important as the rest of the serving line. Dessert displays should be kept clean, and items should be arranged in an orderly and attractive manner. Desserts should be grouped according to type. This will help the customer select the desired dessert quickly. Similar foods and containers should be kept together, and rows should be straight and even. Cake slices should be placed so that both the cake and the icing are visible to the customer. The point of pie wedges should be facing the customer. Cake and pie slices should also be centered on plates.

**Serving Food on the Cafeteria Trayline.** As customers approach, they should be greeted and asked which food items they would like. Counter persons should be prepared to answer questions and make menu suggestions as needed. A pleasant, friendly manner and courtesy are essential qualities of a good counter person.

The cafeteria counter worker serves the food requested by the customer. Foods should be served in exact portions as directed. Incorrect portioning can result in unhappy customers (lack of food) or unhappy workers (loss of profits). Counter workers should know what size plate or bowl is to be used for each food item.

Served food should be placed within the rim of the plate and never extend over the edge of the plate. Relishes that accompany meat should be placed near the meat and away from potatoes to prevent the relish and gravy from combining. If needed, food particles should be wiped from the rim of the plate with a clean cloth before handing or serving the plate to the customer.

Salads may be pre-portioned in individual serving dishes, or the server may serve the correct portion in a dish. The arrangement of the salad in the serving bowl should not be disturbed. The salad in the serving bowl should look equally appealing to all customers.

Entrées are served from the steam table. Food servers should obtain the following information prior to serving the food. Typical questions might be the following:

- "Would you care for gravy with your meat?"
- "Would you like your meat rare, medium, or well-done?"
- "Would you prefer toast with the creamed tuna?"

If hot vegetables are served with the entrée, food servers should ask customers which vegetables they would like to accompany their meal.

Desserts are usually pre-portioned before serving hours, and customers may serve themselves. If the customer wants a special sauce or the dessert desired is not displayed, the food server should provide the needed assistance.

Beverage service may be self-service, or a worker may serve the beverages. At self-service stations, the ice and beverage dispensers should be kept well-stocked.

At the end of the line, the customer's purchases are tallied by a food checker. The bill is marked to indicate the number of customers checked on one ticket. The bill is given to the customer. Depending on the restaurant, payment may be made after the customer is given the bill or after the customer finishes eating.

**Obtaining Food and Supplies.** Cafeterias use different systems for obtaining food and supplies during serving hours. Each cafeteria counter worker serves certain foods and is responsible for re-stocking the counter as needed during slow periods. Some cafeterias employ ***runners***, or ***supply workers***, to keep the counters supplied. The runners keep the cooks informed of the demand for certain foods. They keep the counter worker informed of the food supply in the kitchen. This eliminates the need for counter workers to leave the counter to re-stock needed items.

Some cafeterias use an intercom system to communicate between the counter and the kitchen. The counter worker notifies the cooks when food or supplies are needed. Items may be delivered by an electric conveyer or a kitchen worker.

When replenishing food, full pans should be exchanged for empty ones. Fresh food should not be added to the food left in containers. Food should be scraped off the sides of the containers to prevent the food from drying out and appearing unappetizing. As salads and desserts are taken by customers, new ones should be moved forward from the back and fresh items can be added from behind.

The rims of the containers should be wiped before bringing them to the steam table or cold storage units. Pans should be kept filled because customers hesitate to take the last portion in a pan.

**Attending the Dining Room.** The customer takes the tray of food to the dining area to eat. The customer removes the food from the tray and arranges it on the table. Tray stands may be provided as a place for customers to place emptied trays. Condiments may be made available to customers on self-service condiment stands.

A dining room attendant may be assigned to the dining area. Initially, the attendant might help seat older adults, individuals with physical disabilities, or people with small children. Attendants may also bring condiments like ketchup, mustard, and steak sauces at the customer's request. Attendants serve foods that are being cooked-to-order like eggs, steaks, and pancakes. The customer is provided an identifying ticket for these items while passing through the serving line. Dining room attendants supply supplemental orders and make corrections and additions to the check. They supply napkins and extra flatware as needed. They refill water, iced tea glasses, and coffee cups. They may also remove main course dishes when customers are ready for dessert.

Dining room attendants remove soiled dishes from the table when customers leave. They clean table tops and chair seats. They replace covers and ashtrays. They clean the floor area around the table and push chairs back into place after the customers leave.

**Closing Cafeteria Counter Duties.** After serving hours, the cafeteria counter worker puts away food and cleans the serving units. Food should be properly stored. The steam table, hot tables, cold tables, counter tops, glass shelves, and tray and flatware holders are emptied and cleaned. Storage areas and shelves are cleaned. Coffee urns and other beverage containers are emptied and cleaned.

## *Self-Service: Buffet*

Buffet service may be simple or elaborate. It may be provided for part or all of the meal. In buffet service, a variety of appetizers, hot and cold entrées, vegetables, and salads are displayed on a long table. The table is usually placed where guests can walk around it and serve themselves.

**Preparing the Buffet.** Service personnel are responsible for arranging the buffet serving line. Guest plates should be placed at one end followed by cold dishes, main dishes, salads, and breads. If individual covers are not set on each dining table, napkins and flatware may be placed at the opposite end of the buffet table. Separate tables may be provided for appetizers, beverages, and desserts to eliminate congestion, or these items may be served at the guests' tables.

**Serving the Buffet.** During serving hours, service personnel may serve some food items. Roasts are often carved as guests pass through the serving line. Customers collect food on plates then take the food to a table and seat themselves.

Beverages, bread and butter, and desserts may be served at the table by a dining room attendant. Beverages should be refilled as needed during the meal. The check is presented when guests finish their meal. After guests leave, tables should be reset with clean linen and tableware.

## *Self-Service: Takeout*

In takeout service, foods are packaged for consumption off the premises. Takeout may be a complete meal, a single item, or meal combinations. Many restaurants combine takeout service with table and counter service.

Many fast-food operations feature takeout service. Commonly featured foods include beverages, hamburgers, hot dogs, fried chicken, fried fish, and French fries. Fast-food restaurants with takeout service are popular with travelers. Many do not want to take the time from driving to sit down at a table and be served a meal. For this reason, these facilities are often found along highways. In cities, these facilities are popular with office workers, shoppers, and families with young children.

PIZZA
PIZZA

Some seated-service restaurants and cafeterias offer takeout service. Takeout service may offer featured menu items such as barbecued chicken, pizza, or ethnic specialties. Many people like to pick up food from their favorite restaurant for a quick meal or to feed unexpected guests.

**Preparing the Takeout Counter.** The takeout counter must be kept clean, orderly, and well-stocked. The counter and other areas visible to customers should be cleaned and polished before serving hours. Supplies of disposables and pre-packaged foods should be re-stocked. During serving hours, supplies should be re-stocked as needed.

**Taking Takeout Orders.** To place a takeout order, the customer drives up to a window, speaks into an intercom, or goes to a counter window inside (orders also may be phoned in and picked up or delivered). Orders are usually placed from a posted or printed menu. The carry-out worker records the order on a guest check, a prepared form, or computerized cash register. The order should always be repeated to the customer to make certain that it is correct. Additional complementary foods should be suggested. At the counter window, the customer is usually asked whether the order will be consumed on the premises or taken out. This information is indicated on the order to ensure that it is packaged properly. The customer should be told when the order will be ready. All orders placed at the drive-up window are packaged to go.

**Filling Takeout Orders.** After the takeout order is recorded, it should be relayed to the kitchen or preparation area. Some restaurants pass a written copy of the order to the kitchen staff, and some pass orders verbally. Computerized systems allow the order to go directly to the kitchen for the cook to see on a screen.

In fast-food establishments, a production line is usually used to prepare orders. A grill cook prepares hot foods, then passes them to a helper who wraps or plates them. The helper pushes the order onto a heat table to the counter worker. During rush hours, foods are usually prepared ahead and held on a heat table or steam table until needed. Items like barbecue sauce and chili may be pre-prepared and kept hot in a steamer. The food preparation area may be totally visible to the consumer or be a separate kitchen.

The counter worker assembles the takeout order and may prepare beverages. The worker may also prepare other items like cold sandwiches, French fries, and ice cream beverages and desserts. Foods are wrapped, sacked, boxed, placed in disposable containers, or served on a tray. Lids are placed on beverages to prevent spilling. Appropriate accompaniments, such as sugar, salt, pepper, and sauces, should be offered. Straws, plastic utensils, and paper napkins should be provided with the order. For orders consumed on the premises, accompaniments and supplies may be made accessible to customers on a self-service table or bar. After the counter worker has served the customer, the sales check should be added up, the money collected, and the proper amount of change made and given to the customer.

**Closing Duties for Takeout Workers.** After serving hours, the facility must be readied for the next serving period. All food and beverages must be returned to the kitchen. Milk dispensers, coffee urns, and other beverage dispensers should be thoroughly cleaned. Condiment containers should be replenished and cleaned as needed. Electric and gas equipment should be turned off and unplugged. Floors should be swept, vacuumed, or mopped. Counters, tables, and restrooms should be cleaned. Dishes should be washed, lights turned out, and doors shut and locked if the business is closing for the day.

## Self-Service: Automated

Vending machines and automats are forms of automated self-service. Vending stations are found in office buildings, schools and in bus, railroad, and airline terminals.

**Vending Machines.** *Vending machines* may contain either cold or hot foods. Some offer cold foods like sandwiches, salads, and beverages. Others contain hot foods like coffee, cocoa, soups, and main dishes. Some vending machines provide frozen foods, which may be heated in a nearby microwave oven. Temperatures on all perishable foods need to be checked daily. Products need to be rotated according to a schedule.

Foodservice organizations may provide their own vending operation or use a contracted company. It is important to obtain customer feedback through surveys to find out customers' needs. Some of the popular foods for vending machines include fruit, salads, deli sandwiches and gourmet coffee.

The customer places money or a credit card in a designated slot in the machine. Pushing a button or pulling a knob indicates the food selected. The food is automatically presented from an opening in the machine.

**Automats.** Another form of self-service is the ***automat***, which displays each food item behind a small glass door. The customer inserts money into a slot. The door opens, allowing the food to be removed.

### ◆ Essential Questions: ◆ Self-Service

1. What tasks must be performed to prepare a cafeteria counter for service?
2. What guidelines should be followed when serving food on a trayline?
3. What are the similarities and differences in cafeteria service and buffet service? Explain.
4. What are the similarities and differences in cafeteria service and takeout service?
5. What guidelines should be followed when packaging takeout orders?

## Chapter Highlights

- Counter service features easy-to-prepare meals, short orders, pre-packaged foods, and fountain items. Counter service is used in snack bars, fountain-grill services, coffee shops, drive-ins, and diners.
- Self-service includes cafeteria, buffet, takeout, and automated self-service.
- Sanitation is especially important for counter workers. Counter workers handle more individual food items than most service personnel.
- In cafeteria service, workers must prepare the counters for service before serving hours begin. This involves polishing counter surfaces, stocking supplies and condiments, preparing cold tables and steam tables, assembling serving dishes and utensils, preparing hot and cold beverages, preparing some foods, and arranging foods attractively on the counter.
- The cafeteria dining room attendant may be assigned a variety of duties. These duties may include assisting older adults, persons with physical disabilities, or people with small children. Attendants may also bring condiments to tables at the customer's request and refill water glasses, iced tea glasses, and coffee cups.
- In takeout service, foods are packaged for consumption off the premises. Takeout can include a complete meal, a single item, or meal combinations.
- Vending machines and automats are forms of automated self-service. Customers insert money or a credit card in the machine and make a selection. The food is automatically presented from an opening in the vending machine.

# Chapter 8

## Specialized Types of Foodservice

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

- 4B Describe forms of service utilized in foodservice establishments for presenting food to guests.
- 7G Use appropriate terminology related to the food production and service industry.
- 9I Describe food production skills, procedures, and techniques utilized in catering and other specialized food production operations.
- 10E Perform appropriate tasks in foodservice according to industry standards.
- 10G Apply available technology in foodservice.

### Chapter Vocabulary

accommodator service
American banquet service
canned heat
car service
carhops
catered service
caterer
dais
floaters
food checker
food art
mobile unit catering
off-premises catering
on-premises catering
packing list
passenger tray service
room service
ussian banquet service
tallow
tray service

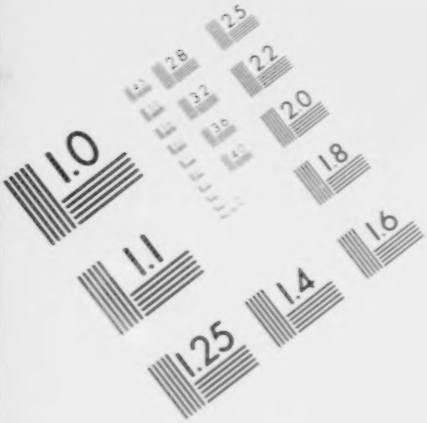
Most foodservice personnel are employed in restaurants. Others are employed in facilities that use specialized types of service. Some foodservice establishments provide facilities for serving large banquets, and some cater food for special functions. Foodservice units serving health care facilities use specialized systems to distribute food to patients and residents. Restaurants in hotels and motels usually provide room service to guests. Some

AIIM

**Association for Information and Image Management**

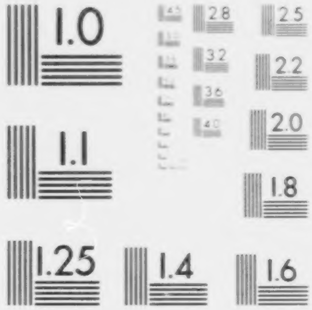
1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

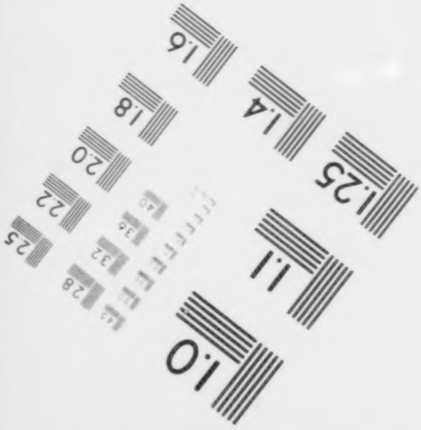
301/587-8202

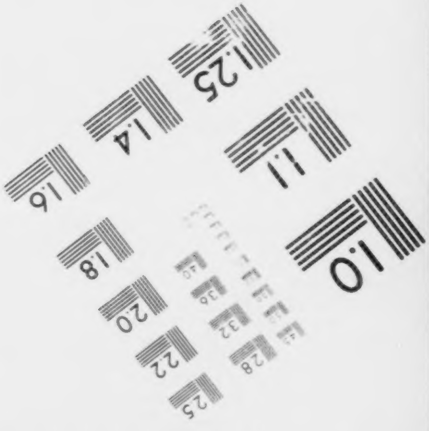

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5

Centimeter
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
mm
1
2
3
4
5
Inches


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5

MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

restaurants use showmanship in preparing, decorating, displaying, and serving food. Each of these specialized types of foodservice require specially trained service personnel.

## SPECIALIZED FOODSERVICE

### Banquet Service

Banquet service is provided by many restaurants, hotels, and motels. Institutional foodservice in schools and hospitals also serve banquets as a service to the institutions and the community.

Banquets are usually served using either American or Russian style service. American is used more often because it is less formal and requires fewer service personnel.

In ***American banquet service***, the banquet tables are completely set in advance. All cold foods, such as water, butter, bread, appetizers, and salads, are placed on the tables before the meal begins. Hot foods are served on heated plates in the kitchen. The plates are covered with metal covers. The covered plates are carried on large trays to tray stands. The covers are removed, and the plates are placed before the guests. All dishes are served and removed from the left, except beverages.

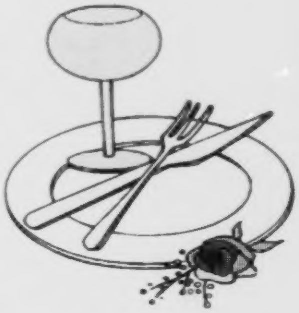
***Russian banquet service*** is more elaborate and formal. Because the menu is more elaborate, the place settings are more complicated. Dinner plates are placed on each guest's cover when the table is set, as in regular Russian service. The food is brought into the dining room on silver platters that hold six to ten portions. Each guest is served individually.

Service must be carefully coordinated for all banquets. Waitpersons serve and clear each course at the same time, as signaled by the headwaiter or host/hostess. The head table is always served first. Bus persons may carry trays from the service room to the service stand or tray stand. Extra service personnel called ***floaters*** may be used to pass rolls, relishes, and butter, and serve beverages. Teams of wait staff, bus persons, and floaters work together to ensure that each course with all its accompaniments is served at all tables at the same time.

### Catered Service

***Catered service*** provides food and service personnel for social and business functions. The functions may range from birthday parties to wedding receptions to club meetings to business and community events. The person who provides catered service is called a ***caterer*** (KA ter er). The caterer may operate from a home kitchen, a restaurant, or a separate business.

Catering is a very adaptable form of foodservice. A catering business is different than a restaurant operation. Unlike a restaurant, it is not confined to a particular location, menu, or schedule.



The caterer provides food and service wherever it is needed either indoors or outdoors. The location may be a private home, a club, a hall, or a city park. Some caterers prepare food in the client's own home. This is called ***accommodator service***. Some caterers have dining room facilities which may be used by groups. This type of catering is called ***on-premises catering***. Transporting food to another location is called ***off-premises catering***. The caterer may even contract to provide food to remote sites using a specially equipped vehicle. This type of catering is called ***mobile unit catering***.

The food ordered is usually for a special occasion like a wedding, club meeting, or business party. Customers may choose from individual food items or a wide selection of menus. They may also select the type of service they want, such as buffet service or table service.

## Tray Service

***Tray service*** is usually offered in hotels and motels, in hospitals and nursing homes, in some drive-ins, and on airplanes. In hotels and motels, ***room service*** allows guests to place their orders from a special room service menu. Room service may be available for breakfast, lunch, dinner, snacks, and beverages. Room service is provided in hospitals and long-term care facilities when patients are not able to leave their rooms for meals. In both instances, the food is prepared in the kitchen and transported to the individual's room. Some drive-ins provide ***car service***; the customer's order is delivered to the car on a tray. ***Passenger tray service*** provides trays of food for airplane passengers during flight.

## Room Service

In hotels and motels, room service may be offered by one or more restaurants in the facility. When guests order from their rooms, the orders are received by the service clerk or captain and then relayed to the appropriate food stations in the kitchen.

The trays or tables are assembled by the room service waitpersons while the food is prepared. The food is covered with a clean cloth or lid. The required number of place settings and appointments are assembled and arranged on the tray or table. Flowers may be added for a special touch. Cold food items are collected and placed on the tray or table. Hot foods are placed in heated, covered dishes or carriers and placed on the trays or tables. ***Canned heat*** or warmers may also be used to keep hot foods hot. Large covers may be placed over the entire trays or tables.

When orders are complete, they should be checked for accuracy and then taken to the guests' rooms. If several trays are being served at the same time, a cart with tiers is used.

At each guest's room, the waitperson should knock on the door and announce, "Room service." When the guest opens the door, the guest should be greeted and the tray or table placed as directed. Covers should be removed and the table set for the guest. Iced water, coffee, and hot foods may be served, or guests may prefer to serve themselves. Before leaving, the check should be presented for signature or payment. An appropriate time for picking up the tray may be arranged.

After the meal is finished, the guest may leave the tray in the room or call room service and ask that the tray be picked up. If the tray is not picked up before the room is made up, it will be placed outside the door of the room. Room service trays should be picked up promptly as they are unappealing to guests.

**Hospital Room Service.** Hospitals and larger long-term care facilities prepare patients' food trays on an assembly line. Prepared trays are then sent to the appropriate areas for serving patients who cannot go to a dining room to eat.

Trays may be assembled in a centralized or decentralized system. A centralized system assembles individual patient trays at some central place close to the production area. Decentralized food is delivered in bulk to the hospital floor where patient trays are assembled.

**Assembling Trays.** Trayline workers are assigned to handle specific food items or jobs. As trays move to their positions, workers read the individual diet orders or menus carefully and assemble the ordered items on the trays in the correct position.

The completed tray includes the following items:

- a tray cover, napkin, and flatware
- hot and cold foods, beverages, and desserts (as specified on the diet order)
- salt (or salt substitute) and pepper
- bread, butter, cream, and jelly as allowed

When the tray is complete, it should be checked for accuracy by a food checker. The ***food checker*** is usually an experienced trayline worker. The food checker checks each menu item on the tray to be sure it matches the diet order.

**Delivering Patient Trays.** After the trays are checked, they are transferred to portable carts designed to keep foods at their proper temperatures. The meals are then delivered to their designated rooms. Foods which need to be prepared immediately before serving, like toast, are prepared on the floor where the trays are delivered. These foods are added to the trays, and then the trays are served to the patients.

**Car and Airplane Service.** In car service, beverages and food are served on trays to customers in their cars by ***carhops***. Depending on the establishment, the carhop may go to the customer's car and take the order, or the customer may order through an automatic speaker system. After the order is prepared in the food preparation area, the carhop delivers the order on a tray to the customer. Dirty dishes are left on the tray and collected by the carhop.

In ***passenger tray service***, food is prepared in the central flight kitchen and transported in refrigerators and warmers. Passengers must order special (for any medical reasons) food several hours prior to the flight. Food is stored in insulated containers until serving time. The flight attendants carry the trays of food to the passengers and remove the trays when the passengers have finished eating.

### ◆ Essential Questions: ◆ Specialized Foodservice

1. What is the procedure for setting covers for a banquet in the American banquet service style?
2. How does Russian banquet service differ from American banquet service?
3. What types of occasions might typically be catered?
4. What is the difference between centralized and decentralized tray service?
5. How do waitpersons in the hotel/motel industry provide quality room service?
6. What procedures should be followed for assembling, checking, and delivering patient food trays in hospitals and long-term care facilities?

## PREPARATION AND SERVICE TECHNIQUES

Caterers usually prepare food for a function in their own kitchens. Foods are transported in special insulated containers which help to keep the food at the correct serving temperatures. Table linens, flatware, dishes, and glassware are often transported as well. A ***packing list*** is used to ensure that all needed items are transported to the catering site.

Before the catered event, the dining area must be set up. Folded tables must be unfolded and positioned. Stacked or folded chairs must be taken out and placed according to table locations. Tablecloths must be spread and covers laid. The procedures for arranging and setting the tables are similar to those used for banquet service. Off-premises caterers will have to make improvised service stands using small tables.

The details of serving will depend on the type of function, the menu, and the desires of the customer. Trayline, buffet, table, or banquet service may be offered. The general rules for each type of service are applied to catered service as well.

### *Room Set-up for Special Occasions*

Preparations for a large banquet begin long before the date of the affair. The customer arranges for a banquet for a certain number of guests on a certain date and selects the menu and style of service. The dining room/meeting room is usually arranged the evening before the event. The banquet crew sets up the rooms according to specifications on the contract. The dining room is usually arranged the evening before the event. Two waitpersons or the banquet crew do the work. Instructions for setting up the dining room are provided.

The seating arrangement for banquets must be carefully planned. The plans must ensure that guests will not be crowded. The arrangement should facilitate serving guests quickly and simultaneously. Tables for six, eight, or ten are faster to serve than long banquet-type tables. Workers may be assigned certain tables and are less likely to get in one another's way. Food servers are assigned certain tables to attend which expedites service and eliminates confusion.

Most rooms lend themselves best to a limited number of arrangements. As a rule, there are certain ways of setting up tables that have been proven to work best. The room arrangement should be based on the following criteria:

- type of function: either banquet, dinner dance, buffet, or reception
- number of guests
- type of service to be used: formal or informal
- amount of equipment and number of servers needed
- shape of the room and any obstructions in it, such as pillars or posts
- presence or absence of a head table, and if used, how many guests will be seated there

Table arrangements may be created from folding tables of various sizes and shapes. Oblong, round, curved, trapezoid, quarter-round, and half-round tables may be used alone or combined to form a variety of arrangements. Figures 8.1 and 8.2 show several ways tables might be arranged.

**Table Arrangements Using Oblong Tables**

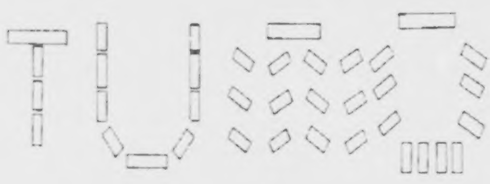


*Figure 8.1*

**Arranging Tables of Different Shapes**

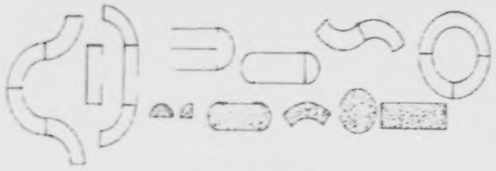


*Figure 8.2*

If possible, the head table should be elevated on a platform or ***dais*** (DA' IS). Some establishments use platforms that can be set up to the size needed and then are collapsible for storage. Raising the head table enables guests at other tables to see the people at the head table.

After the tables are arranged, the tablecloths are laid and the tables are set. The kind and amount of linen, china, glassware, and flatware needed depends on the menu and the style of service.

Large tablecloths are spread more easily by two persons working on opposite sides of the table. If several tables have been put together, it may be necessary to overlap the ends of several cloths to cover the length of the combined tables. Workers should be sure that the centerfold of each cloth lies straight on the table.

Individual covers should be laid in assembly line fashion. For a very large function, a separate cart might be loaded with each item needed, such as bread and butter plates, napkins, knives, and forks. One person would be responsible for laying a single item at each place. Salt and pepper shakers, ashtrays, sugar or sweetener stands, and creamer should be placed where they are convenient to every guest.

Service facilities usually include service stands and tray stands. Service stands hold breads, beverages, supplies, and other needed items. Stands for large trays should be placed conveniently throughout the dining room.

## Serving Special Foods

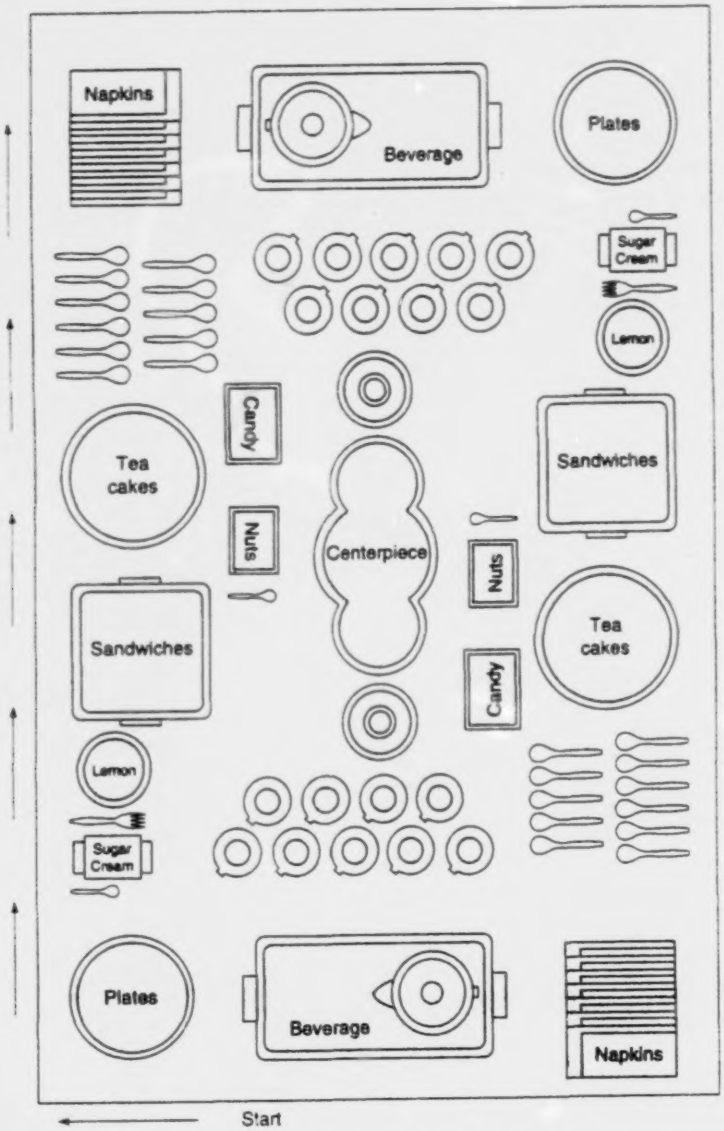
Special occasion foods often require special serving techniques. Among these foods are tea and coffee, punch, cake, and hors d'oeuvres and canapés. A suggested table arrangement for a reception or tea is shown in Figure 8.3.

**Coffee and Tea.** For special occasions, a silver coffee or tea service is appropriate. A separate table set for coffee and tea is acceptable if space is limited. Guests may serve themselves or be served.

**Punch.** Punch is a popular beverage choice for receptions and parties. Punch is served from a silver, glass, or plastic punch bowl. The punch bowl may be set on a matching tray or in a ring of greenery, fruit, or flowers. A decorative ice ring is sometimes floated in the punch bowl. Fruit or flowers frozen in the ice ring may add a festive note.

The proper equipment and arrangement makes punch easier to serve. Punch is poured into a beverage container with a punch ladle. The ladle is usually slightly curved and long enough to extend over the edge of a punch bowl to prevent it from slipping into the bowl. The pouring lips of the punch ladle are located on the side of the ladle to make pour-

## Table Arrangement for a Reception or Tea


Napkins
Beverage
Plates
Sugar Cream
Lemon
Candy
Tea cakes
Nuts
Centerpiece
Sandwiches
Nuts
Tea cakes
Sandwiches
Candy
Lemon
Sugar Cream
Plates
Beverage
Napkins
Start

Source: *Food for Fifty*, Mary Molt, Copyright © 1997 by Prentice Hall. Reprinted by permission of Prentice Hall.

*Figure 8.3*

ing easier. Punch cups may be arranged around the bowl, to one side, or on a tray to one side.

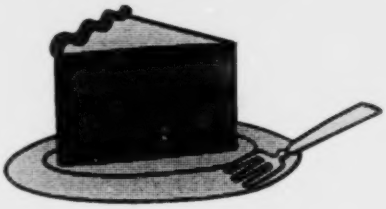
Punch should be served with care in the following manner:

1. Pick up a cup by the handle.
2. Fill the punch ladle part way with punch, and pour punch slowly into the cup; avoid splashing and spilling.
3. Fill the cup one-half full.
4. Return ladle to the punch bowl.
5. Switch the cup to the opposite hand.
6. With the handle of the cup turned toward the guest, serve the cup of punch to the guest.

Punch cups should not be filled too far ahead of time. Fill a few punch cups at a time although a few punch cups may be readied ahead of time after the guests have arrived.

The punch bowl should not be removed from the table for refilling. The punch bowl should be refilled from pitchers of punch brought from the preparation area. The pitchers should be as attractive as the other table appointments. Splashing the punch when pouring it into the punch bowl should be avoided.

**Cakes.** Cakes add a festive note to special occasions and are a popular dessert. Foodservice personnel may be asked to serve cake for a catered affair, a private party, or for customers' or patients' birthdays and anniversary celebrations. In some restaurants, service personnel will sing "Happy Birthday" as the cake is delivered to the customer's table. At birthday parties, the honored guest should blow out the candles and make the first cut in the cake, and then the server cuts and serves the cake. At a wedding reception, the bride and groom, holding the knife together, should make the first cut into the cake; after photographs are taken, the caterer's staff should cut and serve the cake. Proper cake cutting is an important skill.



**Hors d'oeuvres and Canapés.** Hors d'oeuvres and canapés are often served as the main food at special parties and receptions. The appetizers should be prepared and arranged on trays, plates, and other serving dishes in the kitchen. The appetizers should be prepared on duplicate serving pieces so when one is removed, it can be replaced with another like it. This will help keep the table uniform and appealing.

The number of trays and serving pieces should be compatible with the size of the table. To limit the number of serving pieces needed, several different items can be arranged on each tray or plate. The table is more attractive when serving pieces of different sizes and shapes are used.

Appetizers should be replenished frequently. Food should not be allowed to dwindle to one or two appetizers on a tray. Serving pieces should not be refilled at the table. The tray or plate should be removed from the table and replaced with a duplicate tray already prepared in the kitchen. Empty or nearly empty serving pieces should be returned to the kitchen.

At some functions, service personnel serve appetizers directly from the preparation area. A tray of appetizers may be carried among guests. The server should offer the appetizers to individuals or small groups of guests, circulating among them without neglecting anyone or becoming a nuisance.

Trays of appetizers should be checked as they are picked up from the preparation area. The food should be attractively arranged and the garnish should be fresh. The appetizers should not appear crowded. Guests should be able to remove an appetizer from the tray without touching another one.

**◆ Essential Questions: ◆**
**Preparation and Service Techniques**

1. When preparing for a large banquet, what information must the foodservice establishment obtain from the customer in advance?
2. What factors affect the room arrangement for a banquet?
3. What is the procedure for serving punch? How is the punch bowl replenished?
4. How can food affect the room arrangement for a banquet?

## FOOD PRESENTATION AND ARTISTIC TECHNIQUE

***Food art*** includes the preparation, display, and service of food with flair. Exclusive restaurants are popular for menu items prepared at the table that require skill and technique. Presentation appeals to the appetite and the eye.

### Cooking and Flaming in the Dining Room

Most foods that are cooked or flamed in the dining room are not only delicious, but also appealing to other senses. Chefs prepare dishes in front of patrons as an artistic presentation and to entertain.

Cooking in the dining room requires special cooking skills as well as polished presentation techniques. In addition to the right serving technique, the waitperson needs food preparation experience. Most dishes prepared in the dining room require at least two individuals, one to serve and set up and the other to do the preparation. Waffles, omelets, and steaks are examples of foods that may be prepared in the dining room. Some restaurants featuring Japanese food prepare the entire meal in the center of a special table and serve it to customers seated around the edge. A steak restaurant may grill steaks in view of customers.

Flaming is a fairly simple technique with a spectacular effect. Specialty coffee, fruit desserts, ice cream desserts, crepes, steaks, and lobsters may all be flamed. The basic equipment required includes a chafing dish with at least two pans, silver ladles and serving implements, and an extra chafing dish which is set up to keep foods hot.

Some foods may be more easily prepared in the dining room than others. Coffee service and flamed fruit and crepes are among the easier foods to prepare in the dining room. Actual cooking or finishing preparation of foods in the dining room is more of a challenge.

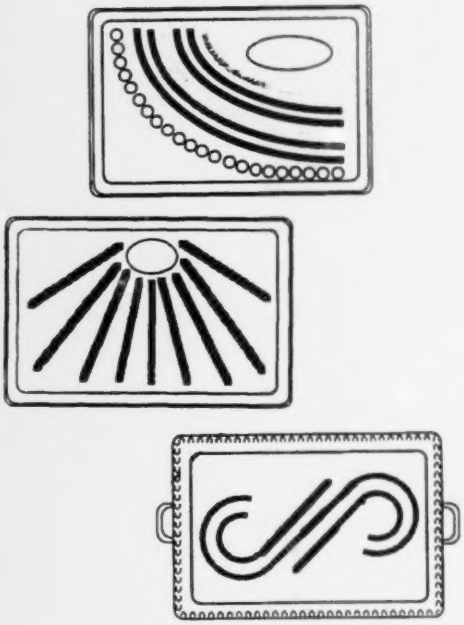
### Decorating Food

Another type of showmanship is exhibited through the use of decorated food. Food decorations add to the appeal of the food. Decorations range from simple garnishes to elaborately decorated cakes.

Edible centerpieces can be most attractive as the focal point on the buffet. They may be made of fruits and vegetables alone or combined with floral arrangements.

Figure 8.4 shows examples of how to attractively arrange buffet platters of food using centerpieces and edible garnishes. Arranging rows of food in curves or in angles around the centerpiece enhances the overall design.

**Attractive Arrangement of Food on Buffet Platters**



Source: Successful Catering, B. Splaver, Copyright © 1991 by John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.

***Figure 8.4***

Ice carvings and tallow work also make spectacular additions to a buffet or banquet table. These delicate carvings made of ice or ***tallow*** (fat) may be used alone as a centerpiece or as a container for food that must be kept cold. Ice carving and tallow work require practice and experience. A variety of shapes ranging from hearts, birds, fish, flowers, and ships to boots and spurs may be created.

### ◆ Essential Questions: ◆ Food Presentation and Artistic Technique

1. How can food presentation and food art add to the appeal of a dish? Give examples.
2. What foods are suitable for flaming? What equipment is required?

## Chapter Highlights

- Preparations for a large banquet begin long before the date of the affair The customer arranges for a certain number of guests on a certain date, selects the menu, and selects the style of service in advance.

- The head table at a banquet is always served first. Teams of waitpersons, bus persons, and floaters work together to ensure that each course with all its accompaniments is served at all the tables at the same time.

- Catering is a very adaptable form of foodservice. The caterer may operate from a home kitchen, a restaurant, or a separate business and provide food wherever it is needed. Typical catered events are weddings, club meetings, business parties, school award banquets, and special receptions.

- Room service allows hotel and motel guests to place their orders from a special room service menu. Room service waitpersons follow appropriate procedures for assembling and delivering trays, serving food and beverages, presenting the check, and picking up trays.

- Tray service is usually offered in hotels and motels, in hospitals and long-term care facilities, in some drive-ins, and on airplanes.

- Diet orders for individual patients are followed in hospitals and long-term care facility tray service. When a tray is assembled, it is carefully checked prior to delivery. Tray service may be centralized or decentralized.

- Food presentation involves cooking and/or flaming in the dining room, food decorating (such as ice carvings and edible centerpieces), and serving special foods in a way that is entertaining and festive.

# Chapter 9

# The Check, Change, and Gratuities

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

8G Practice effective management of resources.

7G Use appropriate terminology related to the food production and service industry.

10A Describe roles and responsibilities in foodservice operations.

## Chapter Vocabulary

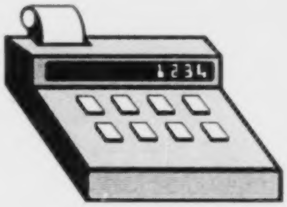
- cash over
- cash short
- cashier
- check tray
- computing the check
- Employee's Report on Tips to Employers
- Fair Labor Standards Act
- gratuity
- IRS Form 8027
- service charge
- subtotal
- tax table
- Tip Reporting Alternative Commitment (TRAC)

The main purposes of a commercial foodservice establishment are to serve customers and to make a profit. Therefore, both human relations skills and mathematical skills are needed by almost every employee in a foodservice operation. The duties of a foodservice employee often include computing the check, presenting the check, handling money, and making change.

## THE CHECK

### Computing the Check

Each foodservice establishment has specific rules for employees to follow when computing the customer's check. ***Computing the check*** means to figure and total the charges. Totaling the charges may be done by the waitperson, counter person, cashier, or checker. Many foodservice establishments use computer programs for both food orders and computing the check. The charges to be computed include menu items, cover charges, sales tax, special services, and extra charges for refills. A ***gratuity*** (tip) charge is computed on the customer's check in some restaurants. A gratuity, or tip, is the amount of money given in return for a service.



A tip left for the wait staff is strictly voluntary. A customer is not required to leave a tip, but it is customary to tip 15 to 20 percent of the total check. Several foodservice establishments automatically add the tip into the total for a party of eight or more. The wait staffs tip amount varies and depends on the customer's perception of the quality of service.

Most foodservice establishments have a tax table for employees to use when figuring the sales tax on a customer's check or it is computed automatically by the computer. The ***tax table*** shows the amount of tax to be added to the check. To figure sales tax without the tax table, the employee should multiply the subtotal on the check by the sales tax rate (which varies in different cities and states) to find the amount of tax for the check. The ***subtotal*** is the amount of the check before the tax has been added. Then the amount of the tax is added to the subtotal to find the total amount of the check. For example:

STEP 1: Figuring the Tax
Example: 8% Tax Rate

| | |
|---|---|
| Subtotal = | \$10.20 |
| Sales tax rate = | x .08 |
| Tax total = | 0.816 = .82 |

STEP 2: Adding the Tax

| | |
|---|---|
| Subtotal = | \$10.20 |
| Sales tax total = | + .82 |
| Check total = | \$11.02 |

Accuracy is very important when computing the check. To make certain the computed charge is correct, the check should be totaled carefully. Uncertain prices should be checked against a menu, and the addition rechecked. Most of the time, the tax is automatically calculated on the computerized read out from the cash register. In the event of a mistake, the manager on duty must approve any changes to the final receipt.

When a mistake is found on the check, the error should be marked through rather than erased. Erasures can look suspicious to those checking records when money is involved. Checks, regardless of mistakes found, should never be destroyed. Illegible checks should be discussed with a superior to learn the policy of the foodservice establishment. Since most check pads are numbered and a careful count made to see that all checks are returned, a missing check can cast suspicion of theft on the employee.

## Presenting the Check

Diplomacy and discretion are required to present a check to the customer tastefully. Both the foodservice employee and the customer can be embarrassed if the check is not presented gracefully. In some foodservice establishments, when the seated customers have finished their meal and indicated they do not want anything more, the check is completed away from the serving area and then presented to the host. When it is not obvious who the host is, or if there are several checks for one table, the check or checks are placed face down near the center of the table.

Respect the wishes of an individual who indicates he or she is paying the check. If the guest is to take the check to the front of the restaurant and pay the cashier, the check should be placed face down on the table to the host's right. The guest should be thanked and a brief remark made to inform the customer to pay the cashier.

In many foodservice establishments the check is presented face down on a ***check tray*** (a small tray with raised sides) or folio. If the host places the payment on the tray, the foodservice employee should take the tray, check, and payment to the ***cashier***, who is responsible for making correct change. Then the foodservice employee returns all the money on the tray to the host, thanks the customers, and invites them to return.

In most fast-food businesses the customers pay for their food when placing an order or when picking up a phoned-in order. The foodservice employee should make change quickly and accurately and follow any additional procedures the employer requires for handling money.

In cafeteria restaurants, a cashier handles the money. In most cafeterias a checker located at the end of the food line scans each tray; tabulates the food items, prices, and taxes; makes a notation on the check of the number of customers covered on the check; and gives the check to the customer. On completion of their meal, customers take their checks to the cashier, usually located near the exit. The cashier rings up the sale on a cash register and returns change.

Some cafeterias, including school cafeterias, may have more than one food line and one or more checker/cashier at the end of the food lines. The checker/cashier tabulates food items, prices, and taxes; rings up the sale; takes money, school tickets, or coupons; and makes appropriate change.

A restaurant offering a smorgasbord buffet with a specific price for the meal being served may have the customers pay the cashier before they select their food. Other restaurants have the wait staff list the buffet on the check, and the check is handled the same as other orders in the foodservice establishment.

The policy of some restaurants is for the customers to pay the wait staff rather than the cashier. The foodservice employee takes the money and the check to the cashier or cash register, checks that the change received is accurate, and returns the change and receipt to the customer. The foodservice employee should stand to the left of the customer, count the change back to the customer, thank the customer, and invite the customer back.

### ◆ Essential Questions: ◆ The Check

1. What are two main purposes of a commercial foodservice establishment?
2. When totaling a customer's check, what charges may be included? List and explain six possible charges.
3. What procedure should be followed if an error is made on a check?

## THE PAYMENT

### Credit Cards and Personal Checks

Since customers often pay their checks with credit cards, employees should know which credit cards are accepted by the foodservice establishment. Also, employees should learn the procedures and equipment specific to their establishment. Common steps for handling credit cards are listed below:

- Check that the credit card is signed by the cardholder.

- Check the credit card's expiration date. Search the "hot card" lists or call to verify.
- Process the credit card transaction according to procedures and equipment utilized in the establishment (such as a credit card machine, bank authorization machine, or automated computerized system).
- Many restaurant chains use the "swipe" method of credit card transactions. The credit card number authorizes transaction and it checks for stolen or lost cards using a computer file system.
- Produce the sales draft according to established procedures. Check to see that all items (such as food, beverages, service, tax, and total are correctly listed).
- Return the card, credit slips, and a pen to the customer for signature. (Cardholder may want to add a tip at this point.)
- Leave the customer copy of the credit slip with the customer.
- Place the establishment copy of the credit slip in the cash drawer.

The credit card system is also used in home or office delivery food systems.

Some customers will want to pay for their meals with personal checks. The policies of the foodservice establishment should be closely followed. In order to have effective control of checks, the following points are recommended:

1. Make sure all menu items are charged to the customer. A duplicate check procedure may be used.
2. Charge correct prices for the menu items. Pre-programmed prices using electronic cash registers are common.
3. Account for all customer checks using a sequential numbering system.

Traveler's checks should be countersigned in the presence of the foodservice employee and are usually honored in foodservice establishments when presented with the required identification.

## Making Change

The ability to make change is a skill needed by many foodservice employees. The change should be counted out loud and checked for accuracy as soon as it is received from the cashier. Then the change should be counted out loud again as it is handed to the customer. The amount of the sales check and the amount of money received, such as $2.20 out of $5.00, should be repeated. Employees should count up from the smallest coin to the largest bill, such as $2.25, $2.50, $3.00, $4.00, and $5.00, as the change is handed to the customer. When using a cash register to make change, the money received should be placed on the shelf of the cash register in full view of the customer. The check showing the amount of the sale should be placed beside the money. The amount of the sale is the starting point for counting back change.

## Using a Cash Register

The responsibilities of a foodservice employee include opening the cash register at the beginning of the day or shift. The starting cash in the drawer is counted to make sure the correct amount is in the cash drawer. The amount (starting cash) is used for giving change to the customers.

The cash registers in foodservice establishments will vary. Most cash registers automatically figure the correct change. Some of the cash registers show the correct amount of change the customer is to receive immediately after the employee rings up the sale. Other cash registers automatically return the change through a change chute to the customer.

## Verifying Cash on Hand

At the end of the day it may be the duty of the foodservice employee to close the cash register. When closing the cash register, most foodservice establishments will want a cash register report prepared to prove cash or balance. The cash register report shows the amount of money received, the amount of money paid out, and the total amount of sales during the day or shift.

To close the cash register and prepare the cash register report, the foodservice employee should follow the steps below:

1. **Determine cash in drawer.**
   - Count each denomination of $100, $50, $20, $10, $5, $2, and $1 bills; list the total for each.
   - Count each type of coin (dollar, half dollar, quarter, dime, nickel, penny), and list the total for each.
   - List all checks and record the total.
   - List all credit card slips and record the total.
   - Total the amount of cash, checks, and credit card slips in the cash drawer.
2. **Determine cash paid out.**
   - List all cash vouchers and write down the totals.
   - Total the amounts to determine cash paid out.
3. **Determine total cash sales.**
   - Add cash in drawer total to cash paid out total.
   - Subtract starting cash in drawer.
4. **Check that the total on the cash register tape is the same as the total cash from sales.**
   - When the amount of money in the cash drawer at the end of a day or shift is more than the amount of sales on the cash register tape, it is referred to as ***cash over***.
   - When the amount in the cash drawer is less than the sales on the cash register tape it is ***cash short***.
5. **Sign the cash register report.**
6. **Put all the money and receipts in a money bag.**
   - Give the money bag to the manager or supervisor according to the policies of the foodservice establishment.
   - If a bank deposit is to be made, paperwork should be made in duplicate so the carbon can be kept for records at the foodservice establishment.

### ◆ Essential Questions: ◆
### The Payment

1. What are common policies for handling credit card payments?

2. Why is it important that a food waitperson be able to count change back to customers?

3. What is the correct procedure for opening the cash register at the beginning of the day?

## GRATUITIES AND SERVICE CHARGES

### Handling Tips

In the United States, tipping wait staff for table and counter service restaurants is common. Foodservice managers need to be aware of all federal and state legislation, as well as regulations related to tipped and tipping employees.

Usually the more prompt and courteous service the customer receives, the larger the gratuity the foodservice employee receives. The amount of the gratuity is also influenced by the customer's attitude toward tipping and whether or not the customer was satisfied with the meal.

Most people figure a tip at 15 to 20 percent of the total check, depending on the service received and the type of restaurant. Many foodservice establishments automatically add a gratuity charge to the check, especially for large parties. If this is the policy, and even if it is stated on the menu, the foodservice employee should tell the customer before taking the order. A customer who does not understand that the gratuity has been added may leave a tip at the table and be upset over prices higher than anticipated.

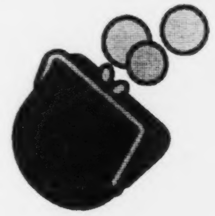
Customers sometimes ask the waitperson to figure 15 percent of the total check or the gratuity for them. A fast and easy way to figure the gratuity at 15 percent is to find 10 percent of the check by moving the decimal point in the total one place to the left. Take one-half of that figure. Then, add the two figures together to compute the amount of the tip.

To find 15 percent of a check for $12.00:

1. Move decimal point one place to the left
2. 10% of $12.00 = $1.20
3. 1/2 of $1.20 = $ .60
4. $1.20 + $.60 = $1.80 (amount of gratuity)

Foodservice employees should observe the following guidelines when accepting tips:

- Do not stay at the table waiting for a tip.
- Smile and thank the customer for a tip.
- Collect the tip and go on with other tasks.
- Do not count or talk about your tips in the dining area.
- Do not discuss with customers what others tip you.
- Give customers who do not tip the same service as customers who do tip.



In most foodservice establishments, the waitpersons receive gratuities directly. In others, the tip is collected through a gratuity added to the customer's check and then divided between waitpersons and bus persons, depending on the situation.

The ***Fair Labor Standards Act*** of 1973 is also known as the wage-hour law. As of 1990, the Fair Labor Standards Act requires that foodservice employees working in an establishment grossing more than $500,000 a year must be paid a minimum wage. This same established business is obligated to adhere to overtime and child labor laws. The wage-hour law defines a tipped employee as one who regularly receives more than $30.00 a month in tips. When the employer collects all tips as part of the gross receipts, the employer must pay the full minimum hourly wage. If the policy is for the employee to keep all tips, the amount of the tips may be considered part of the wages.

Foodservice employees need to realize that their tips are taxable as income, and they do need to keep accurate records on the amount of tips received. Daily recording of tips received will help to ensure accurate records. Employees should check with their employer to find out the method used in determining the tip amount for purposes of tax reporting and withholding of social security and income taxes. Foodservice employees receiving more than twenty dollars in tips each month may be required to file Form 4070, ***Employee's Report on Tips to Employers***, with their employer. Foodservice employees are required by law to report the total amount of tips received on their federal income tax return.

Restaurant employers are required to file ***IRS Form 8027*** annually, which includes the following information:

- annual sales
- amount of tips reported by employees
- amount of sales charged by customers
- amount of tips charged to credit cards

The IRS targets tip reporting by owners of foodservice establishments as one of its major compliance initiatives. ***The Tip Reporting Alternative Commitment (TRAC)*** was established by the IRS to encourage owners of foodservice establishments to more closely monitor tip reporting by their employee. Owners who sign this agreement with the IRS are guaranteed that they will not be billed for taxes on unreported tips unless the IRS first examines employees' tax returns and finds that tips have not been accurately reported.

### Service Charges

The ***service charge*** is a predetermined amount added to the customer's check. Unlike the voluntary tip, service charges are part of a restaurants gross earnings, which are reported as income tax. Employees benefit from service charges by salary increases. The wait staff may keep any tips left in addition to the service charge.

**◆ Essential Questions: ◆**
**Gratuities and Service Charges**

1. What guidelines should be followed for accepting tips?
2. What is the IRS Form 8027, and why is it important to understand the process of tip recording for the foodservice facility and the waitperson?
3. What is the formula for figuring a 15 percent gratuity?

## MANAGING COUNTER ITEMS

In most commercial foodservice establishments, prepackaged items like candy, gum, and mints are displayed for sale at the cash register counter. Newspapers, cigarettes, small packaged toys, and common over-the-counter medicines, such as aspirin and antacids, may also be available at the counter. Counter items are sold by any employee who takes guests' payments for meals. In some establishments, counter items are dispensed from vending machines placed near the counter area. Toothpicks are often provided at the counter at no cost to the customer. Toothpicks may be available from a dispenser or individually wrapped in cellophane.

The head cashier is usually responsible for ordering, inventorying, and re-stocking counter items. These responsibilities are usually independent of similar back-of-the-house ordering and receiving operations. The cashier has direct contact with vendors and is responsible for seeing that counters and vending machines are well-stocked at all times.

**◆ Essential Questions: ◆**
**Managing Counter Items**

1. Who is responsible for ordering, inventory, and re-stocking counter items?
2. What is the benefit of counter items sales to a foodservice establishment?

## Chapter Highlights

- Compute the customer's check by figuring and totaling the charges which include menu items, cover charges, sales tax, special services, extra charge for refills, and sometimes the gratuity.
- The check should be figured away from the serving area and presented face down on the table to the host's right when the customer is to pay the cashier; when it is not obvious who the host is, or when several checks are for one table, checks should be placed down near the center of the table.
- The customer's signature and needed information should be checked for verification when personal checks or credit cards are presented.
- Change should be counted back to the customer by repeating the amount of the sales check and the amount of money received and then counting up from the smallest coin to the largest bill.
- At the beginning of the day or shift, the cash register is opened and the cash in the cash drawer is counted; at the end of the day or shift, the cash register is closed and cash is proved or balanced.
- When accepting tips, waitpersons should smile and thank the customer, collect the tip and go on with other tasks; avoid counting or talking about tips in the dining room; avoid discussing with customers what others tip; and give customers who do not tip the same service as customers who tip. The foodservice employee should avoid staying at the table waiting for a tip.

# Chapter 10

## Safe and Efficient Workplace Practices

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

6A Summarize legislation, government regulations, and public policy affecting the food production and service industry.

6B Describe considerations regarding liability for injuries or damages to customers, employees, or facilities.

6C Interpret laws and policies pertaining to food production and service establishments.

7A Determine employer and employee responsibilities for workplace safety.

7B Evaluate regulations and standards guiding safety in the food production and service industry.

7C Identify major causes of accidents and ways to prevent them.

7F Analyze the division of workplace responsibilities.

7G Use appropriate terminology related to the food production and service industry.

### Chapter Vocabulary

accident-prone
emotional or mental fatigue
fatigue
National Fire Protection Association
Occupational Safety and Health Act (OSHA)
physical fatigue

Safety is essential in the foodservice facility. Government, foodservice management, and foodservice employees all contribute to the safety of a foodservice operation.

## SAFETY OBLIGATIONS OF FOODSERVICE MANAGEMENT

### *Government Regulations*

City, state, and federal governments establish and enforce minimum safety standards in foodservice facilities. These regulations are enforced through permits, licensing, and inspection.

The purpose of the federal ***Occupational Safety and Health Act (OSHA)*** of 1970 is to assure safe, healthy working conditions for employees. Under this act, an employer must keep the place of employment free of recognized hazards.

### *Management Responsibilities*

Overall responsibility for safety in the foodservice facility belongs to management. Foodservice management is responsible for the safety of both foodservice employees and customers. Management must do the following:

- provide a safe facility
- establish safety rules and procedures
- provide employees with safety training
- enforce safety rules and regulations
- provide fire extinguishers and first-aid kits

### *Employee Responsibilities*

Every foodservice employee must help maintain safety standards to prevent accidents. Employees can do their part to ensure safety by doing the following:

- observing safety rules and procedures
- identifying and reporting hazards
- knowing the location of emergency equipment and how to use it
- knowing emergency procedures and escape routes

**◆ *Essential Questions:* ◆**
***Safety Obligations of Foodservice Management***

1. Who is responsible for safety in a foodservice facility?
2. How can safety be ensured?
3. What is OSHA? What is the OSHA's function in the foodservice industry?

## MAJOR CAUSES OF FOODSERVICE ACCIDENTS

Accidents are caused, they do not just happen. Refer to Table 10.1 for the most common foodservice accidents and their causes.

Accidents are caused by either unsafe conditions or unsafe acts. Unsafe conditions should be corrected or reported whenever they are observed. Warning signs should be posted when needed to alert others until the condition can be remedied.

Unsafe acts occur when workers do not pay attention to what they are doing, get in too much of a hurry, or do not follow rules. Some workers even appear to be ***accident-prone***. These workers have many more accidents than others. Their accidents may be caused by carelessness or lack of physical coordination.

Common Foodservice Accidents

| Foodservice Accidents | Causes |
|---|---|
| falls | • spills<br>• slippery wet floors<br>• obstructions<br>• poor lighting<br>• failure to use safe ladders<br>• over reaching<br>• running or horseplay |
| cuts | • dull knives<br>• improper use of cutting equipment<br>• broken glass or dishes<br>• sharp corners or edges<br>• falling objects |
| burns, shocks, and explosions | • touching hot surfaces and objects<br>• scalding liquids and foods<br>• hot grease<br>• flammable materials near open flame<br>• loose fitting garments near flame<br>• careless disposal of smoking materials<br>• use of wrong fire extinguisher<br>• faulty electrical equipment<br>• improper handling of electrical cords and appliances<br>• careless lighting of gas stoves and oven |
| strains and bruises | • overloading trays<br>• lifting heavy objects<br>• carrying loads incorrectly<br>• horseplay and practical jokes<br>• colliding with others or objects |

*Table 10.1*

Fatigue can cause accidents. ***Fatigue*** is weariness caused by labor or exertion. Its causes may be physical, mental, or emotional.

***Physical fatigue*** results from heavy work or physical activity. Foodservice workers may feel physical fatigue from standing and walking or from lifting heavy pots and pans or trays (examples: sore feet, tired muscles, and back strain from lifting).

***Emotional or mental fatigue*** may result from feelings about one's self, one's job, or one's personal life. When people feel bad about themselves or toward others, they are likely to feel tired and are more likely to have accidents. Examples of emotional or mental fatigue include inability to remember food as ordered or the basic procedures, worry about personal problems, etc. To avoid fatigue, observe the following suggestions:

- Get plenty of sleep.
- Consume a nutritious diet.
- Practice good posture.
- Take periodic rest breaks.
- Develop good relations with co-workers.

- Use time- and energy-saving work methods.
- Develop a positive attitude toward work.
- Try to leave your personal problems at home.

### ◆ Essential Questions: ◆ Major Causes of Foodservice Accidents

1. What are the differences between physical and mental fatigue? Give examples.
2. How can a foodservice worker avoid fatigue?

## ACCIDENT PREVENTION

Falls, cuts, burns and shocks, fires and explosions, and strains and bruises are common types of accidents in the foodservice industry. Most of these accidents can be prevented if employees know and follow safety procedures.

### Fires and Explosions

The kitchen is the most common area for fire and explosions in foodservice establishments. Most fires and explosions can be easily prevented. The Ten Commandments of Fire Safety are shown in Figure 10.1. The ***National Fire Protection Association*** regulates automatic fire protection systems for commercial

### Ten Commandments of Fire Safety

1. Make certain portable fire extinguishers are properly located and mounted; of the correct type, size, and properly identified; and fully charged and maintained.
2. Train all employees in the proper use of portable fire extinguishers.
3. Train employees in conducting a patrons evacuation of your restaurants.
4. Post emergency telephone numbers in appropriate locations.
5. Paths of exit must be unobstructed, well lighted, equipped with emergency lighting and exit signs.
6. Do not permit the accumulation of refuse or rubbish. Follow recognized housekeeping procedures.
7. Clean your kitchen hood, filters, and duct of grease accumulation.
8. Have your kitchen hood's automatic fire protection system inspected and serviced by qualified persons every six months.
9. Have your automatic sprinkler system inspected annually.
10. Inspect your electrical system for frayed wiring, prohibited use of extension cords, overloading of circuits, clearance around motors to prevent overheating, and ready accessibility to all electrical panels.

Source: *Design and Equipment for Restaurants and Foodservice*, C. Katsigris and C. Thomas, Copyright © 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

⇨ ***Figure 10.1***

kitchens. An automatic fire protection system is a necessity for a commercial kitchen.

Many foodservice kitchen fires are caused by grease. Grease, oil, and fat catch fire easily and the fire spreads rapidly. To prevent grease fires, observe the following rules:

- Keep range, ovens, and hoods free from grease.
- Do not overheat fats. Use equipment with a thermostat or check temperature with a thermometer.
- Never leave hot fat unattended.
- Do not overfill utensil with fat or oil or add cold wet food to hot fat.
- Wipe up spilled oil or fat with a paper towel, then clean the surface with detergent and water.
- Cover fat spilled on the floor with salt, then clean up.
- Never use water or flour to put out or douse a grease fire.
- Never try to carry a burning pan to another location.

Gas as a cooking fuel is safe if properly used. However, if gas is confined in a small area without sufficient air, it will explode when ignited. To avoid gas explosions, observe the following precautions:

- Check pilot lights and all burners before lighting the range, oven, or other gas appliances.
- Turn on exhaust fan before lighting gas range, oven, or other gas appliances.
- Always open the oven door for a moment to allow any gas to escape before striking a match.
- Strike the match before turning on the gas when lighting the oven.
- If there is the smell of gas upon entering the kitchen, check the pilot lights.
- If pilot lights are lit and there is still the smell of gas, open the windows and call the gas company.

## Burns

Even small burns are painful and take a long time to heal. To avoid burns from hot equipment, food, and liquids, observe the following safety precautions:

- Wear close-fitting clothing in the food preparation area.
- Use thick, dry hot pads or mitts when handling hot pans and dishes.
- Lift utensil covers away from the face to let the steam escape before removing.
- Be sure all the steam is gone before opening pressure cooker.
- Turn pan handles away from the front of the range to prevent tipping.
- Keep flammable materials, such as towels, away from open flames.
- Get help to handle heavy, hot containers.
- Avoid over-filling containers with hot liquids or food.
- Open oven door slightly to let heat and steam escape before bending face and arms over it.
- Pull oven rack out, then remove container. Do not reach into oven.
- Never put cold, wet food into hot grease. It may spatter or boil over and catch fire.

## Shock

Foodservice equipment may be the source of electrical shocks. To avoid shocks, observe the following precautions:

- Be sure electrical cords are in good repair.
- Never pull on an electrical cord when disconnecting from wall outlet.
- Always unplug electrical equipment from the wall outlet first, then disconnect the cord from the equipment.
- Never handle electrical equipment with wet hands or while standing in water.
- Wear rubber-soled leather shoes to prevent electrical shocks or burns from hot spills.
- Be sure an appliance is turned off before it is plugged into a wall outlet.
- Unplug electrical equipment before washing it.
- Report any faulty electrical equipment promptly.

## Cuts

Most cuts in foodservice result from the improper use of knives. To avoid knife cuts, observe the following rules:

- Use the correct knife for the job.
- Keep knives sharp.
- Pick up knives by the handle.
- Use a cutting board when possible.
- Cut away from the body and fellow workers.
- Curl the fingers like a claw to keep them away from the knife blade.
- Do not use knives for prying lids, opening cans, cutting paper or string, or sharpening pencils.
- Keep hands free from grease when using a knife.
- If a knife falls, do not try to catch it. Get out of its way.
- Always carry a knife with the point down and the cutting edge away from the body.
- Do not leave knives laying on work tables or in the sink.
- Wash knives separately and immediately after use.
- Never leave knives in a sink of water where they cannot be seen.
- Turn the sharp edge away from the body when wiping or cleaning a knife.
- Store knives in a knife rack or in slots in a drawer.

To avoid cuts from cutting equipment, observe the following precautions:

- Avoid wearing loose clothing or dangling jewelry.
- Pay careful attention to the task being done.
- Be sure cutting equipment is sharp.
- Use safety guards when using cutting or slicing machines.
- Operate cutting equipment correctly.
- Use tampers, rather than fingers to push food into choppers and grinders.

To avoid cuts from broken glass, dishes, or cans observe the following rules:

- Discard chipped or cracked glasses and dishes.
- Sweep up broken glass or dishes immediately.
- Pick up glass splinters with a damp paper towel and discard.
- Do not pick up broken pieces of glass with hands.
- Put broken glass in a separate trash container or wrap in newspaper before placing in trash container.
- Never try to locate broken pieces of glass in dishwater. Drain the sink instead.

- Carry and handle glass and dishes carefully.
- Discard open cans and their lids promptly.

## Falls

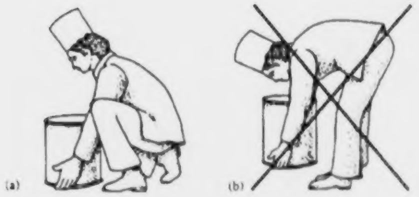
Falls are responsible for more injuries in foodservice than anything else. Employees can avoid most falls by following these simple rules:

- Keep floors clean and dry.
- Wipe up spills immediately.
- Walk, do not run.
- Wear low-heeled, comfortable work shoes with rubber soles.
- Keep work areas and traffic lanes clear.
- Use a sturdy stepladder, never a chair, for reaching objects on high shelves.
- Avoid over-reaching.
- Watch where you are going, especially when going through doors or around corners.
- Correct or report floor hazards and obstructions.

## Strains and Bruises

Strains and bruises are usually the result of carelessness. Strains usually occur in the lower back. Strains are caused by using incorrect methods for lifting heavy objects. Once the back has been weakened by a strain, it can easily be injured again. People can usually prevent back strain by observing the following rules for lifting:

- Do not overload trays and carts.
- Balance weight on trays carefully.
- Carry trays correctly.
- Lift heavy objects by keeping the load close to the body. With the feet apart and knees bent, raise the load gradually and straighten the knees slowly. Keep the back straight. See Figure 10.2.



Source: *Professional Cooking*, W. Grisslen, Copyright © 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

⇨ ***Figure 10.2***

- Set objects down by reversing the method used for lifting. Keep the back straight. Keep the load close to the body, with the feet apart and knees straight, lower the load gradually, bending the knees slowly.
- Get help to lift and carry heavy objects such as large pots of food or bags of flour.
- Store heavy items on lower shelves.

Bruises can be avoided by paying careful attention to what one is doing. To avoid bruises, one should watch where he or she is going and what he or she is doing. The foodservice industry recommends the height of the work table to be four inches below the worker's elbow. See Table 10.2 for recommended heights for kitchen tables.

### ◆ *Essential Questions:* ◆
### *Accident Prevention*

1. What are the "ten commandments" of fire safety?

2. What are five ways to prevent each of the following types of accidents?
   - falls
   - cuts
   - burns and shocks
   - fires and explosions
   - strains and bruises

3. How can prevention of accidents affect a foodservice operation?

**Recommended Heights for Kitchen Tables**

| Equipment Use | Suggested Height |
|---|---|
| **Work table, for light work done standing** | **37-39 inches (for women)**<br>**39-41 inches (for men)** |
| **Work table, for heavy work (kneading, chopping)** | **35-36 inches** |
| **Equipment table (for mixers, etc.)** | **26-28 inches** |

Source: *Design and Equipment for Restaurants and Foodservice*, C. Katsigris and C. Thomas, Copyright © 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

⇨ ***Table 10.2***

## Chapter Highlights

- Government, management, and employees all contribute to the safety of a foodservice operation.
- The federal Occupational Safety and Health Act (OSHA) of 1970 requires an employer to keep the place of employment free of recognized hazards.
- Management must provide a safe facility, establish safety rules and procedures, provide employees with safety training, enforce safety rules and regulations, and provide fire extinguishers and first aid kits.
- Employees help ensure safety in the foodservice establishment by observing safety rules and procedures, identifying hazards, and reporting hazards and other unsafe conditions to the management.
- The most common foodservice accidents are falls, cuts, burns, shocks, explosions, strains, and bruises.
- Accidents are caused by either unsafe conditions or unsafe acts. Fatigue and stress make accidents more likely to occur.
- Observance of safety rules aid in avoiding accidents.

# Chapter 11

## Emergency Procedures

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

6B Describe considerations regarding liability for injuries or damages to customers, employees, or facilities.
6C Interpret laws and policies pertaining to food production and service establishments.
7A Determine employer and employee responsibilities for workplace safety.
7D Demonstrate emergency first aid procedures.
7E Follow employer policies for handling emergencies.
7G Use appropriate terminology related to the food production and service industry.

### Chapter Vocabulary

abdominal thrusts/
  Heimlich Maneuver
attention alert signal
chest thrusts
Class A fire
Class B fire
Class C fire
first-degree burn
PASS
second-degree burn
third-degree burn
tornado warning
tornado watch

The foodservice establishment's safety instruction should include what to do in case of emergencies. Foodservice employees should know what to do in case of fire, severe weather, or a medical emergency. Emergency drills should be used to provide practice in reacting calmly to emergencies according to a set plan.

## FIRE SAFETY

Serious fires occur so often in foodservice kitchens that every employee should understand fire safety and know what to do in case of a fire. Injuries often occur because people panic or become confused. If a fire occurs, one should follow the emergency fire procedures established by the business. One should report to the fire department the exact location and type of fire. Other employees should be alerted and customers or patients and visitors should be assisted to safety.

## Reporting A Fire

One should never try to put out a fire alone. Help should always be sought. First, the designated person in that area should be notified. Then, if necessary, the fire department should be called. At this time, other employees and customers or patients should be alerted.

Getting help serves two purposes: (1) it brings more people to help extinguish the fire, and (2) it warns other employees near the fire. There should never be a delay in calling the fire department, even for a few minutes. Minutes can mean the difference between a small fire and a total loss, between a minor inconvenience and death.

Fires may be reported by turning on the alarm in a fire alarm box or by telephone. Red fire alarm boxes may be located inside or outside buildings. After the alarm has been turned on, someone should wait nearby until fire fighters arrive for directions. If the community uses fire alarm boxes, one should know the location of the nearest one.

The fire department's telephone number should be clearly posted beside each telephone. It is usually given inside the cover of the telephone book. Today, most areas have 911 emergency service. If the number cannot be located and 911 service is not available, the local operator can connect the caller with the fire department or take the information and report the fire. When a fire is reported, the following information should be given:

- name
- name of the business
- address of the business
- type of fire
- location of the fire in the building
- size of the fire

Fire also should be reported to persons nearby, to the person in charge of the foodservice shift, and to the director of the building's fire brigade, if there is one. The designated persons then should take charge of evacuating the building, if necessary.

## Moving To Safety

All employees should be familiar with the evacuation plan in case of fire. They should also know their roles in carrying out the plan. Foodservice businesses need a plan for evacuating customers and employees. Health care facilities need plans for evacuating patients, visitors, and personnel. Schools need plans for evacuating children, teachers, and other employees.

Foodservice employees should always keep fire doors, fire escapes, and fire exits free from equipment and debris. They should know procedures for turning on the sprinkler system if the system is not automatic.

In evacuating the building, one should not take chances by trying to save personal belongings. The first priority during a fire is saving oneself, and unless another life is involved, no chances should be taken. If possible, it is best to allow trained fire fighters to get others out of a fire.

### *Responding To A Fire*

A fire must have three things to burn: Oxygen + Fuel + Heat = Fire. Almost any material can become fuel for a fire – food, rags, flammable liquids like grease or cleaning fluids, wood, furniture, and plastics.

If the fire is small, such as in an ashtray or a pan, one may be able to put it out without danger. To put out a fire, one of its essential ingredients must be removed. Some techniques for doing this include the following:

**Keep the fire from getting oxygen.**
- If the fire is in a pan, put the lid on or douse with baking soda. The fire will quickly consume its remaining oxygen and die.
- Smother the fire with a fire blanket.
- Use a fire extinguisher.
- Drown the fire with water. Use water on paper, wood, excelsior, cloth, and ashtray fires. Do not use water on grease, cooking oil, or electrical fires.

**Remove the fuel.**
- Turn off the breaker switch to stop fueling an electrical fire.
- Turn off the gas.
- Remove nearby flammable materials.

**Remove the heat.**
- Cool the fire with water.
- Turn off the burner or heating element under the container of grease or cooking oil.

If one chooses to extinguish or contain the fire, they must be careful. An escape route should be kept open so one can escape if the fire grows. A person should not reach over the fire to get baking soda or the fire extinguisher. This could result in a person getting burned or catching their clothing on fire.

### *Types of Fires*

Although the same three substances are needed for a fire to burn, all substances do not burn in the same manner. The three types of fire likely to occur in foodservice establishments are the following:
- ***Class A*** – wood, paper, and rubbish
- ***Class B*** – gas, grease, and other liquid
- ***Class C*** – live electrical equipment

Fire extinguishers are labeled for the class of fire for which they are to be used.

#### ◆ *Essential Questions:* ◆ *Fire Safety*

1. What information should be provided to the fire department when reporting a fire?
2. What are the keys to successfully putting out a fire?

## TYPES OF FIRE EXTINGUISHERS

A fire extinguishing system is required in all foodservice establishments. The inability to quickly extinguish a fire can lead to serious injury to employees and guests and massive destruction to property.

### *Automatic Fire Extinguishing Systems*

Most foodservice establishments are equipped with automatic fire extinguishing systems to prevent major fire disasters. A general system used in dining, storage, and service areas has water sprinklers installed in the ceiling that come on automatically when a predetermined temperature is reached at the point of a sprinkler. Automatic kitchen systems are equipped with dry chemicals to extinguish grease fires. Special systems may be installed over ranges and grills. Unlike the other automatic systems, range and hood systems can be activated manually if they fail to come on automatically.

Automatic fire extinguishing systems are checked regularly by the local fire marshal. In general, foodservice employees have no responsibilities for turning these systems on or off or for maintaining them. In fact, with the exception of the manual option on the range and hood systems, employees should not tamper with these systems in any way. However, foodservice employees can take other steps to keep fires from spreading.

## Using A Manual Fire Extinguisher

A manual fire extinguisher is a storage container for an extinguishing agent such as water or chemicals. It is designed to put out a small fire, not a large one. The higher the number rating on the extinguisher, the more fire it puts out. Numbers range from 1 to 240. High rated extinguishers are often the heavier models, but this is not always true.

Foodservice employees should know where fire extinguishers are located, for what type fire each extinguisher is suitable, and how to use each type before a fire occurs. Without having this information, however, the general rule is to use the fire extinguisher closest to the fire and follow the directions on the extinguisher. If properly located, the fire extinguisher closest to the fire is the most suitable for putting out the type of fire expected to occur in that area. For example, extinguishers suitable for putting out grease fires would be located in the kitchen near the range or grill; extinguishers suitable for putting out rubbish fires would be located where trash is collected. See Figure 11.1 on the ***PASS*** system for using a fire extinguisher.

### Using a Fire Extinguisher: PASS

◆ To use a fire extinguisher, one should think of the word ***PASS*** and follow these general directions:

1. **PULL** the pin. Some units require the releasing of a lock latch, pressing a puncture lever, or other motion.
2. **AIM** the extinguisher nozzle (horn or hose) at the *base* of the fire.
3. **SQUEEZE** or press the handle.
4. **SWEEP** from side to side at the base of the fire until it goes out. Shut off the extinguisher. Watch for a reflash and reactivate the extinguisher, if necessary.

⇨ *Figure 11.1*

Chemical and water extinguishers require slightly different action. Read the instructions on an extinguisher before you use it.

Fire extinguishers are labeled for the class of fire for which they are to be used. Traditionally the labels A, B, or C have been used alone to identify fire extinguishers. Recently pictograms have come into use. The user may find the A, B, C labels or both the pictograms and the A, B, C labels on an extinguisher.

Using one type fire extinguisher on another type fire may make the fire worse. Common errors are using water (A) on a grease or on an electrical fire (B or C). A multipurpose dry chemical extinguisher labeled ABC puts out most types of fires. Kitchens are usually equipped with a combination BC extinguisher. Refer to Table 11.1 to show the label and pictograms for each type of fire extinguisher.

## Types of Fire Extinguishers

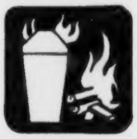
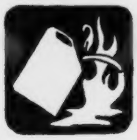
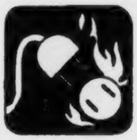
| Label | Pictogram | Type of Fire |
|---|---|---|
| A |  | *Ordinary Combustibles*<br>Fires in paper, cloth, wood, rubber, and many plastics, require a water type extinguisher labeled A. |
| B |  | *Flammable Liquids*<br>Fires in oils, gasoline, some paints, lacquers, grease in a frying pan or in the oven, solvents and other flammable liquids, require an extinguisher labeled B. |
| C |  | *Electrical Equipment*<br>Fires in wiring, fuse boxes, energized electrical equipment, and other electrical sources, require an extinguisher labeled C. |

*Table 11.1*

**◆ Essential Questions: ◆**
***Types of Fire Extinguishers***

1. What are the three classes of fires most likely to occur in a foodservice establishment?
2. What is meant by PASS? Explain the procedure.

## WEATHER EMERGENCIES

Foodservice businesses should plan for weather-related emergencies as part of their overall safety program. Foodservice managers should identify the hazards most likely to occur in their area and make plans for dealing with each. Weather-related hazards most likely affecting foodservice businesses include thunderstorms, lightning, tornadoes, hurricanes, and blizzards.

### Weather Alerts

For any type of severe weather, it is important to stay aware of what is happening. The most common sources of information are news and weather reports on local radio and television stations. A National Weather Service weather radio can be purchased to provide twenty-four hour weather reports and weather watches and warnings. An attention alert signal is used in some areas to alert the public to fire or storms. An ***attention alert signal*** is a three- to five-second, steady, high-pitched tone. It means that action is required. Foodservice workers should learn the uses of such signals locally. Knowing the signal's local meaning will help one know how to respond. The signal usually means that one should tune to a local TV or radio station broadcast for information.

### Tornadoes

Tornadoes are threats in many parts of the country. However, even when conditions are favorable for tornadoes to develop, many people's activities do not cease. They continue to work, shop, eat, and go about their daily routine. Because a tornado may strike suddenly, foodservice employees should learn emergency procedures for responding to a tornado.

The National Weather Service issues two types of reports on tornadoes. A ***tornado watch*** means conditions are such that tornadoes could develop. A ***tornado warning*** means a tornado has been sighted visually or by weather radar. Persons close to the storm should take cover immediately.

Tornado watches and warnings are announced to the public by radio and television, with some television stations placing a symbol in the corner of the screen. The designated person, usually the foodservice manager, should monitor radio or television stations during a tornado watch to obtain continuous weather advisories. This person should direct employees and customers to take cover if the signal is given.

Each foodservice employee should know the safest place for shelter in the foodservice establishment. When a tornado warning is heard, one should go immediately to the designated place. Safe places include tornado shelters or cellars, underground excavations, and substantial steel framed or reinforced concrete buildings. Structures with wide, free-span roofs should be avoided. One should stay away from windows. Safety can be sought by standing in an interior hallway on a lower floor, preferably in the basement. Radios and television sets should be kept on, but the weather bureau or other information centers should not be telephoned.

### Power Failures

One common problem caused by both fire and severe weather is power failure. Power failure may also occur as a result of other causes. The foodservice establishment should have a plan for evacuating customers and employees in the event of power failure. Panic due to the sudden darkness is the greatest hazard. The chance of panic can be reduced with the following precautions:

- Exits should be well-marked and kept clear.
- Candles used on tables for atmosphere can provide light in case of power failure.
- Calm employees who are familiar with evacuation plans should direct customers calmly and safely out of the building.

◆ **Essential Questions:** ◆
**Weather Emergencies**

1. What is the difference between a tornado watch and a tornado warning?
2. How can panic be avoided in the case of a power failure?

## MEDICAL EMERGENCIES

When employees or customers have accidents, they should receive immediate care. First, the accident must be reported to the supervisor, who will probably send the person to the first-aid station, or if the accident is serious, the supervisor will send the person to a doctor or call an ambulance. Small cuts, burns, or bruises should be cared for immediately.

Employees should do their part to guard against accidents, but in case an accident occurs, they should seek aid for any type of injury suffered. No injury is too small to report. Employers must fill out accident reports for any injury.

The responsibility for administering first-aid may be designated to one trained person on each shift. However, all foodservice employees need an understanding of basic first-aid procedures. The sections below give first-aid procedures to follow in various medical emergencies.

## Choking

Occasionally, a person will choke on a food or beverage. Choking occurs when a foreign object lodges in a person's throat and cuts off breathing. When choking occurs, the person cannot speak and may not be able to move. The choking victim may be unable to alert anyone to what is happening. Without help the person will die in only a few minutes.

Foodservice employees should stay alert for signs that a customer may be choking. Should one believe a customer is choking, they should act quickly and go to the person immediately. If the choking person is coughing forcefully, let him or her try to cough up the object. A person who is getting enough air to cough is getting enough air to breathe. The foodservice employee should stay with the person and encourage the choking victim to continue coughing. However, if the person continues to cough without coughing up the object, an ambulance should be called.

A partially blocked airway can very quickly become completely blocked. A person whose airway is completely blocked cannot speak, cough forcefully, or breathe. Sometime the person may cough weakly or make high pitched noises. This indicates the person is not getting enough air to stay alive. Action should be taken at once. A bystander should call for an ambulance while care is being given to the victim.

When someone is choking, the airway must be opened quickly. This is done by giving the victim a series of quick, hard thrusts to the abdomen. These upward thrusts push the abdomen in, putting pressure on the lungs and airway. This forces the air in the lungs to push the object out of the airway. These ***abdominal thrusts*** are also called the ***Heimlich maneuver***. This technique was developed by U.S. surgeon Henry Heimlich, M.D., as a means to dislodge food or other objects that are blocking the airway in a conscious victim.

The following instructions should be followed in administering abdominal thrusts:

1. Stand behind the victim.
2. Wrap arms around the victim's waist.
3. Make a fist with one hand and place the thumb side against the middle of the victim's abdomen just above the navel but below the rib cage.
4. Grab your fist with your other hand and give quick, inward and upward thrusts into the abdomen.
5. Repeat these thrusts until the object is forced out or the victim becomes unconscious.

If the choking victim becomes unconscious, the procedures for giving abdominal thrusts to an unconscious victim should be followed:

1. Straddle onto both of the victim's legs.
2. Place the heel of one hand on the middle of the abdomen just above the navel.
3. Place the other hand on top of the first.
4. Point the fingers of both hands directly toward the victim's head.
5. Give quick thrusts toward the head and into the abdomen.
6. After giving five thrusts, lift the victim's lower jaw and tongue with your fingers and thumb.
7. Slide one finger down the inside of the victim's cheek and try to hook the object out. (Be careful not to push it down further.)
8. Give the victim two slow breaths.
9. If you still cannot get air into the victim, repeat thrusts, finger sweeps, and breaths. (Continue this sequence until the object is removed and you can breathe into the victim.)

If a conscious victim is obese or pregnant, ***chest thrusts*** should be given instead of abdominal thrusts. Chest thrusts for a conscious victim are like abdominal thrusts, except for the placement of the hands. The following steps are to be followed when giving chest thrusts:

1. Place your fist against the center of the victim's breastbone.
2. Grab your fist with your other hand and give quick thrusts into the chest.
3. To give chest thrusts to an unconscious victim whose airway is blocked, the following procedure should be administered:

a. Place the heel of one hand on the center of the victim's breastbone.

b. Place the other hand on top of it.

c. Give up to five quick thrusts. (Each thrust should push the chest down about 1 1/2 inches.)

d. Once you are able to get air into the victim, continue to check the victim by feeling for a pulse.

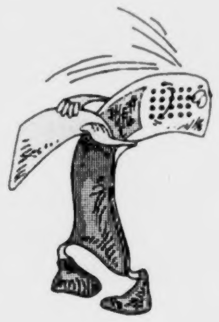
e. If the victim is not breathing, give rescue breathing.

f. If the victim does not have a pulse, give CPR.

Abdominal or chest thrusts should be discontinued at once if the object comes out or the victim begins to breathe or cough. Abdominal thrusts and chest thrusts can cause internal injuries. Therefore, whenever thrusts are used to dislodge an object, the victim should be taken to the nearest hospital for follow-up care, even if the victim seems to be breathing without difficulty. Refer to Figure 11.2 for illustration of the Heimlich Maneuver.

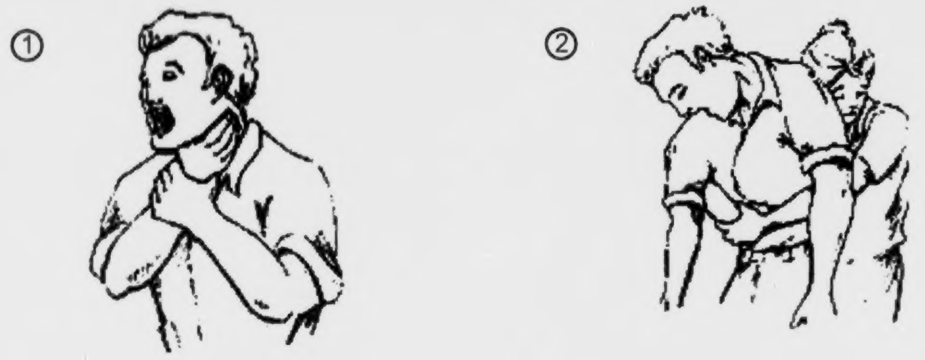
## Cuts and Bruises

For minor cuts, cleanse the wound with water. Leave uncovered unless a dressing is needed to protect the wound and keep out infection. Consult a health care professional regarding further treatment, such as stitches or care of any puncture wound. A tetanus shot may be needed following any puncture wound.



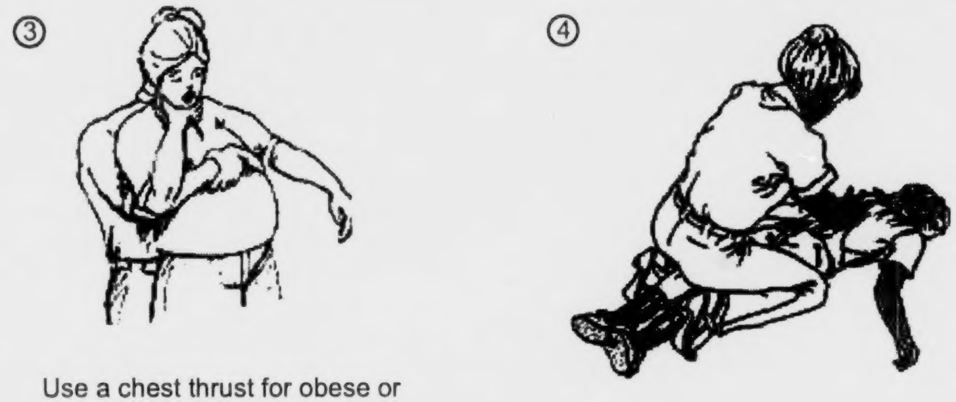
For severe cuts, it is urgent that severe bleeding be stopped immediately. Shock and loss of consciousness may result from rapid loss of blood. The wound should be covered with a clean dressing, such as a thick pad of gauze or a folded clean cloth. Then direct pressure should be applied using a hand. A tourniquet should never be used except in cases of massive hemorrhaging, as with a severed limb, that cannot be controlled by any other means. Professional medical care should be sought as soon as possible.

## The Heimlich Maneuver



Determine if the person can speak or cough. If not, proceed to the next step.

Perform an abdominal thrust (Heimlich Maneuver) repeatedly until the foreign body is expelled.



Use a chest thrust for obese or pregnant persons.

⇨ *Figure 11.2*

**Classification of Burns**

| Type | Description | Treatment |
|---|---|---|
| **First-degree burn** | skin reddened but unbroken | place under cold water |
| **Second-degree burn** | skin reddened, blisters formed | place under cold water and cover with dry, sterile dressing |
| **Third-degree burn** | skin partly destroyed; charring present | cover entire area with a dry [illegible] |

*Table 11.2*

Most bruises are relatively small injuries. When a small bruise occurs, cold applications, wrapped or covered, should be put on the injured area to prevent additional swelling of tissue and to slow down internal bleeding.

There are three types of burns: ***first-degree, second-degree***, and ***third-degree***. Refer to Table 11.2 for a description of each type of burn and what treatment should be administered.

Clothing that is stuck to burned areas should not be removed. Medicine or ointment should not be applied to burns except when ordered by a doctor. Blisters from a burn should not be broken.

**◆ Essential Questions: ◆**
**Medical Emergencies**

1. What first aid procedures should be followed for a choking victim?
2. What first aid procedures should be used for a severe cut?

## ACCIDENT REPORTS

Management must keep accident records of all injuries, regardless how minor the accident. Even a minor injury can result in permanent damage, especially if ignored. Written records of accidents should include the kind of injuries that have occurred and to whom, the day and the hour they occurred, and where they occurred. The accident record is necessary for OSHA and insurance purposes. It protects both the employer and the injured person. The employer must immediately report to OSHA each injury or health hazard that results in a fatality or hospitalization of five or more employees. An annual summary of all work-related injuries and illness must be submitted to OSHA each February.

### ◆ Essential Questions: ◆ Accident Reports

1. What accident and injury records must be recorded and to whom must they be reported?
2. Why is it so important to have written records of accidents?

## Chapter Highlights

- Foodservice employees should know what to do in case of fire, severe weather, or medical emergency.
- If a fire occurs, always get help. First notify the designated person in your work area. If the fire is small, put it out by removing oxygen, fuel, or heat. Be sure to use the right procedures or fire extinguisher for the type fire. If necessary, call the fire department. Alert other employees and customers or patients; it may be necessary to evacuate the building.
- The three types of fire likely to occur in foodservice establishments are Class A – wood, paper, rubbish; Class B – gas, grease, and other liquid; and Class C– live electrical equipment.
- The weather-related hazards most likely to affect foodservice businesses include thunderstorms, lightning, tornadoes, hurricanes, and blizzards.
- For any type of severe weather, it is important to stay informed of current conditions by listening to news and weather reports on local radio and television stations or a National Weather Service weather radio. Know the local attention alert signal and tornado watch and warning signals.
- Panic can be avoided during severe weather by knowing emergency exits, evacuation plans, designated shelters, and emergency procedures.
- When foodservice employees or customers have accidents, they should receive immediate care. All accidents should be reported to the supervisor.
- When a choking victim's airway is completely blocked, the victim cannot speak, cough forcefully, or breathe. This indicates the victim is not getting enough air to survive. Care should be given immediately to the victim, while a bystander calls an ambulance.
- Minor cuts should be cleansed with water and may be left uncovered. Puncture wounds require a physician's care. For severe cuts, stop bleeding immediately by applying a clean dressing and using the hand to place direct pressure on the wound, then seek medical attention.
- Minor bruises can be treated with cold applications to prevent additional swelling of tissue and to slow down internal bleeding.
- Written records of accidents should include the kind of injuries that have occurred and to whom, the day and the hour they occurred, and where they occurred. Records are necessary for OSHA and insurance purposes.

# Chapter 12

# Employee, Equipment, and Facility Sanitation

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

- 6C Interpret laws and policies pertaining to food production and service establishments.
- 7B Evaluate regulations and standards guiding safety in the food production and service industry.
- 7G Use appropriate terminology related to the food production and service industry.
- 8A Comply with government regulations and policies that apply to food safety and sanitation techniques utilized in food production and service.
- 8B Practice correct sanitation procedures in food production and service operations.
- 8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.
- 8F Maintain acceptable standards in employee grooming, health, and hygiene.
- 8H Describe environmental factors affecting safe food production.
- 11H Implement quality assurance standards in all aspects of the food production and service industry.

## Chapter Vocabulary

aseptic
chemical sanitizer
contaminants
contamination
conveyor dishwashing machine
cross-contamination
food contact surfaces

hygiene
pesticides
sanitarian
sanitary
sanitary codes
sanitizing solution
stationary dishwashing machine

Sanitation involves the creation and maintenance of conditions favorable to good health. To avoid health hazards in foodservice establishments, personnel, equipment, and facilities must be both clean and sanitary. Clean means absence of visible soil. ***Sanitary*** means free of harmful microorganisms and other harmful substances. In health care facilities, the term ***aseptic***, meaning free from disease-producing microorganisms, is used to refer to the extremely clean conditions which must be maintained.

The main purpose of maintaining sanitary conditions in foodservice establishments is to serve food that is free of ***contamination***, which means contact that makes something unclean and unsuitable for use. Contaminated food contains disease-producing organisms. Standards for sanitation in foodservice apply to personnel, equipment, facilities, the food supply, and the handling of food. Sanitation standards for food handling are discussed in chapter thirteen.

## SANITATION CODES FOR FOODSERVICE

Standards for sanitation in foodservice are established by laws known as ***sanitary codes***. These laws make it illegal for a foodservice establishment to be unsanitary. The main purpose of food sanitation codes is to protect the consumer from food contamination.

### *Federal Regulations*

Most federal laws about food do not directly affect the foodservice establishment. However, federal standards for foodservice sanitation are used as models for state and local regulations. In addition, the federal government works to safeguard many food products purchased by foodservice establishments. The federal agencies which make and enforce sanitation standards are the Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), and the U.S. Center for Disease Control (CDC).

### *State and Local Regulations*

The laws which affect foodservice establishments on a day-to-day basis are those enforced by state and local health authorities. These agencies create detailed regulations and conduct inspections to ensure compliance. While state and local ordinances vary, many are patterned after the Model Foodservice Sanitation Ordinance recommended by the Federal Food and Drug Administration.

Inspections of the foodservice facility are the most visible aspect of sanitary codes. Inspections are made by a ***sanitarian***, a professional in the field of sanitation and a representative of the state or local government. Inspections may be made of building plans and specifications before the facility is built. Once the building is completed, an inspection is made before a permit is issued. After the foodservice facility has opened, inspections may occur anytime from once a month to once a year. In addition to sanitation inspections conducted by government agencies, some foodservice facilities contract with private companies for unannounced inspections.

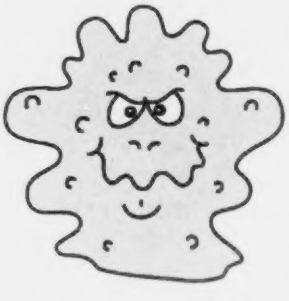
Violations discovered by the government sanitarian must be corrected promptly. Failure to do so may make the owner subject to a fine, unfavorable publicity, and mandatory training for staff at the cost of the owner. When extremely serious violations are discovered, the establishment may be closed.

**◆ Essential Questions: ◆**
**Sanitation Codes for Foodservice**

1. What is the main function of sanitary codes?
2. What federal and state standards are set for foodservice sanitation?

## SANITATION FOR FOODSERVICE PERSONNEL

People are the most common source of food contamination. According to one estimate, up to 50 percent of all food handlers are bearers of disease agents which may be transmitted by food. Staphylococcus may be found on the hair and skin and in the mouth, throat, and nose. The lower intestinal tract often houses salmonella and perfringens organisms. These are found in otherwise healthy people. Once a person becomes visibly ill, the likelihood of contaminating food increases dramatically. Boils, pimples, carbuncles, inflamed cuts, and infected eyes and ears are common sources of staph bacteria. Colds, sore throats, influenza, and tuberculosis are diseases spread by careless sneezing and coughing. Diarrhea, upset stomachs, and hepatitis are also shared with others by the careless foodservice worker.



### Bathing

Because the skin provides an ideal place for many microorganisms to live and reproduce, personal cleanliness of foodservice workers is essential. Daily bathing is a must. Bathing reduces the number of bacteria on the skin. It also helps to prevent body odor which is offensive to both patrons and co-workers.

### Hand Washing

The foodservice worker's hands are the greatest source of contamination in the foodservice establishment. Careless habits such as picking the nose, rubbing the ear, scratching the scalp, fingering a pimple or open sore, running fingers through the hair, and coughing and sneezing without using a handkerchief all transfer microorganisms to the hands. For this reason frequent hand washing is the foodservice worker's most important defense against contamination.

***Cross-contamination*** is the transfer of harmful microorganisms from one food to another by means of human hands, utensils, or equipment. This may occur if foods eaten raw, such as salad greens, are handled after foods to be cooked, particularly poultry or meat, and the food handler does not wash his or her hands in between the two tasks. Salmonella is the bacteria that is commonly spread by cross- contamination.

Hand washing should be both frequent and thorough. Incidents in which hands should be thoroughly scrubbed include the following:

- before beginning work
- before handling food
- after visiting the restroom
- after coughing, sneezing, blowing the nose, or using a handkerchief
- after touching the face, hair, or infected areas

- after smoking a cigarette
- after touching items, such as soiled clothing and dish cloths
- after touching unclean equipment and work surfaces
- after handling raw food, particularly meat and poultry
- after clearing away used dishes and utensils
- after handling money

To wash hands properly, one should complete the following steps:

1. Stand well away from the sink and turn the water on. Use water as warm as the hands can comfortably stand.
2. Moisten the hands and apply a disinfectant liquid or powder soap. Lather well beyond the wrists as far as needed to remove soil and dirt.
3. Pay careful attention to the areas between the fingers and around the nails. Use a brush for cleaning under the nails.
4. Rub one hand against the other using friction. Rub for about 20 seconds.
5. Rinse hands thoroughly under running water. Allow the water to flow from above and down the fingertips. This rinses contaminants off the hands rather than up the arms. **Contaminants** are disease-carrying substances. Well-planned foodservice facilities have faucets which turn off automatically or ones with a lever which can be pushed to "off" with the elbow. Otherwise, use a single-service towel to grip the faucet while turning it off.
6. Dry hands thoroughly. Use a sanitary single-service towel or hot air dryer. A single-service towel is a paper towel or a cloth towel meant to be used only once. See Figure 12.1 for proper hand washing techniques.

After completing these steps, one should not touch anything that could contaminate their hands before returning to work. Hands should be washed often enough to be kept clean at all times.

## Other Hygiene Practices

***Hygiene*** refers to cleanliness practices that help reduce sources of contamination. In addition to the practices already mentioned, there are other basic hygiene practices that need to be followed. Clean fingernails, teeth, hair, and clothing are necessary for every foodservice worker. Fingernails should be kept short and clean, with no fingernail polish. Hangnails should be treated and clipped. Teeth should be brushed at least twice a day. Hair should be shampooed frequently. A hair net, band, or cap should be used to cover hair. Clean undergarments, uniforms, and aprons should be worn on a daily basis. Rings should not be worn when working with food.

## Health Practices

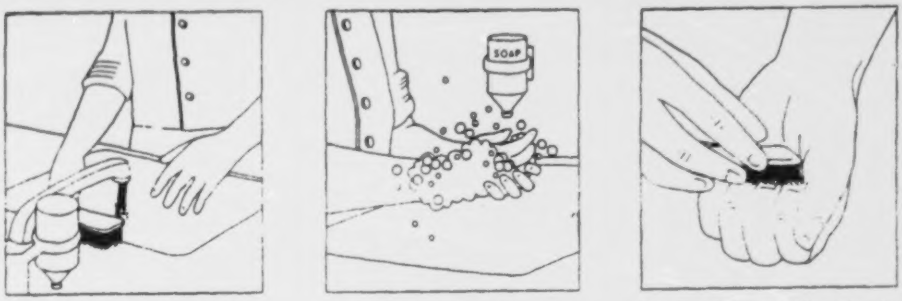
Good health practices are another way to reduce the chance of transmitting diseases to others. One should have regular physical checkups. Persons should work only when they are free of disease or illness. Smoking should be done only in designated areas. Wounds and open sores should be bandaged and covered with a waterproof protector, such as gloves. In some cases, the worker may need to be moved to another work station, where food is not handled, until the injury heals.

## Sanitation Practices

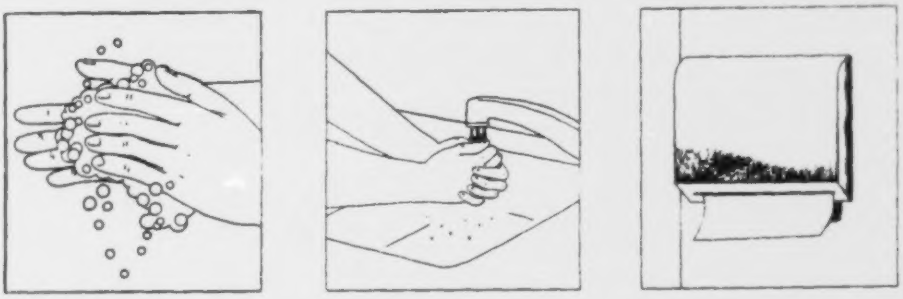
Foodservice workers must handle food and food contact surfaces safely. Good habits can prevent food contamination or the spread of disease. Good sanitation practices include the following:

- Do not wash hands in sinks used to prepare food.
- Do not spit on the floor or into sinks.
- Cover mouth during coughs and sneezes, then wash hands immediately after.
- Avoid touching pimples or scratching the head and face.

**Proper Hand Washing Techniques**



1. Use water as hot as the hand can comfortably stand.
2. Moisten hands, soap thoroughly, and lather to elbow.
3. Scrub thoroughly, using brush for nails. Rinse.



4. Resoap and lather, using friction for 20 seconds.
5. Rinse thoroughly under running water.
6. Dry hands, using single-service towels or hot-air dryer.

Source: *West & Wood's Introduction to Foodservice*, J. Payne-Palacio & M. Theis, Copyright © 1997 by Prentice Hall. Reprinted by permission of Prentice Hall.

***Figure 12.1***

- Never use dish or utensil wiping cloths to remove perspiration or to dry hands.
- Use clean spoons, never fingers, each time for tasting food.
- Cover foods properly and store in the refrigerator.
- Use disposable plastic gloves, tongs, or scoops when serving ice cubes, butter, rolls, or pastry.
- Do not touch the parts of dishes and utensils which customers put in their mouths. These ***food contact surfaces*** include the rims of glasses and cups, tines of forks, blades of knives, bowls of spoons, and the top or sides of plates and bowls.
- Throw away uneaten food and unopened individual containers of sugar, salt, and pepper that are returned from the dining area. Never re-serve or eat such items.
- Scrape leftover food from plates with a rubber scraper, not hands.
- Never handle clean place settings or food without washing your hands after wiping tables, bussing soiled dishes, or handling money.

Cleaning and sanitizing glasses, dishes, and flatware are necessary to prevent food-borne diseases. In addition, the cleanliness of these items may affect the reputation of the foodservice facility. Pots and pans and other utensils used in food preparation and service must also be kept clean and sanitary.

Clean and sanitary refer to different qualities. A plate may appear clean, but may harbor harmful organisms if it was not washed properly. A glass may appear water spotted, but be free of germs if it was rinsed in hot water or treated with a sanitizing solution after being washed. It does not look clean, but it is sanitary. Similarly, a foodservice employee may appear clean, but, in fact, may be harboring a harmful microorganism that may contaminate food during preparation or service.

Dishwashing may be done by hand or by machine. Either way sanitation is ensured by heat high enough to kill microorganisms or by treatment with a chemical sanitizing compound. The most common method of heat sanitizing is immersion of an object in water at 170°F (about 77°C) for no less than 30 seconds. The most common chemical sanitizers are chlorine, iodine, and quaternary ammonia, sometimes referred to as quats. Chemical sanitizing may be done in two ways. One way is the object is immersed in the correct concentration of sanitizer for one minute. The other way is the surface of the object is rinsed, swabbed, or sprayed with double the usual recommended concentration of sanitizer. For the sanitizing process to work, the object must be thoroughly clean and completely rinsed. Sanitation does not replace the need for good cleaning.

**◆ Essential Questions: ◆**
**Sanitation for Foodservice Personnel**

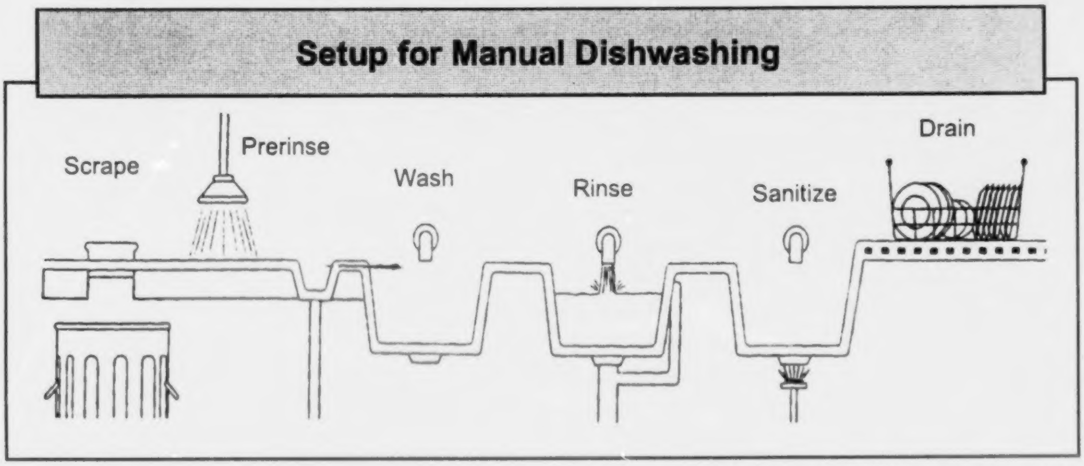
1. What is the procedure for proper hand washing by foodservice workers? Describe.
2. What practices should foodservice workers use to prevent food contamination and spread of disease?

## DISHWASHING AND STORAGE OF CLEAN TABLEWARE AND UTENSILS

### Hand Dishwashing Procedures

Hand dishwashing can be as effective as machine dishwashing if it is done carefully. The two processes in hand dishwashing is prewash and washing. Completion of these processes involves the following six steps:

1. Clean the sinks and work surfaces before beginning.
2. Presoak, scrape, and sort items to be cleaned on a scraping table or other area where garbage can be disposed.
3. Wash in the first sink in a clean detergent solution at a temperature of 120°F (about 49°C). Use a brush or dishmop to loosen and remove any remaining soil.
4. Rinse in the second sink in clean water 120 to 140°F (about 49 to 64°C). Be sure all traces of food soil and detergent are removed.
5. Sanitize in the third sink by immersing items in hot water at 170°F for 30 seconds or in a chemical sanitizer solution for 1 minute. A ***sanitizing solution*** for immersion sanitizing may be made of 1 ounce (2 tablespoons) of chlorine bleach to 1 gallon of water.
6. Air dry all sanitized items. Do not wipe dry as wiping can recontaminate the items.



**Setup for Manual Dishwashing**

Source: *Professional Cooking*, W. Gisslen, Copyright © 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

⇒ ***Figure 12.2***

See Figure 12.2 for the setup for manual dishwashing.

## Machine Dishwashing Procedures

Several types of dishwashing machines are used in foodservice establishments. ***Stationary dishwashing machines*** complete wash, rinse, and sanitize cycles without moving the rack of items. A ***conveyor dishwashing machine*** moves the dishes along a conveyor through the various cycles. These machines may vary in size, style, and capabilities.

As with hand dishwashing, the first step in machine dishwashing is presoaking, scraping, and sorting items. A prerinse section may be built into the dish machine or dishes may be sprayed by hand to remove heavy soil. Cups and glasses should be placed upside down in dish machine racks. All of one kind of dish should be loaded together in the same rack. Flatware should be loaded into the dishwashing machine as recommended by the manufacturer. Knives and forks should be mixed with spoons so that the spoons do not nest. Flatware should not be crowded or it will not be cleaned properly.

The most important concern in operating the dish machine is to be sure that proper water temperatures, detergent, and rinse agent levels are maintained. Wash temperature should be 150 to 165°F (66 to 74° C). The rinse should be 165 to 195°F (74 to 90°C). Clean items should be allowed to air dry for a short time before storing. The dish machine should be cleaned at least once a day or more frequently if needed. Strainer pans need to be emptied during peak use. See Table 12.1 for specific requirements for hot-water sanitizing machines recommended by the National Sanitation Foundation (NSF).

Another important concern in operating the dishwashing machine is cross-contamination if one worker is loading and unloading the machine. The worker can contaminate clean dishes by failing to wash their hands after touching dirty dishes.

## Procedures For Storing Clean Tableware

Clean items must be transported and stored in clean, protected areas. Wheeled dish carts or tables are often used for this task. The cart itself must be kept clean and sanitary. The storage area must be more than six

## Specification Requirements for Hot-water Sanitizing Methods

| | Minimum Wash Temperature | Minimum Sanitizing Rinse Temperature | Maximum Sanitizing Rinse Temperature |
|---|---|---|---|
| Stationary rack/ single temperature | 74°C | 74°C (165°F) | 90°C (195°F) |
| Stationary rack/ dual temperature | 66°C (150°F) | 82°C (180°F) | 90°C (195°F) |
| Single-tank conveyor | 71°C (160°F) | 82°C (180°F) | 90°C (195°F) |
| Multiple-tank conveyor | 66°C (150°F) | 82°C (180°F) | 90°C (195°F) |

Source: National Sanitation Foundation International, Ann Arbor, MI. ANSI/NSF Standard 3, "Commercial Spray-Type Dishwashing and Glasswashing Machines," 1996. Reprinted by permission.

⇨ ***Table 12.1***

inches off the floor. It should be protected from splashes, dust, and contact with food. Stored items must be accessible without having to touch surfaces which will contact food or beverages or the customer's mouth. These precautions will keep glasses, dishes, flatware, utensils, and equipment from becoming contaminated before use.

**◆ Essential Questions: ◆**

**Dishwashing and Storage of Clean Tableware and Utensils**

1. What is the most important fact to remember when hand dishwashing?
2. How are hand dishwashing and machine dishwashing similar?
3. How does cross-contamination occur with machine dishwashing?
4. How can contamination be prevented when storing clean tableware and utensils?

## SANITATION REQUIREMENTS

### Stationary Equipment

Proper cleaning of stationary equipment is as important as the proper cleaning and sanitizing of utensils. One contaminated meat slicer, for example, could cause hundreds of people to become ill.

Follow the manufacturer's detailed instructions for disassembling and cleaning stationary equipment. For general cleaning, observe the following guidelines:

- Unplug electric equipment before cleaning.
- Remove removable parts and wash and sanitize by hand.
- Wash remaining food-contact surfaces and rinse by wiping or spraying with a solution of ***chemical sanitizer*** mixed to twice the strength required for immersion sanitizing. Allow to air dry before reassembling.
- Keep cloths used for food-contact surfaces separate from other wiping cloths. Wring out wiping cloths frequently in a sanitizing solution and store them in the solution

when not in use. Launder cloths daily or more often if necessary.

## Facility Sanitation

The sanitation and cleanliness of a facility is necessary for staying in business. Cleanliness is necessary to preserve the appearance of furniture and to sanitize surface areas. Clean, attractive surroundings also help to make a meal enjoyable, which will help persuade a consumer to return to the facility.

## Cleaning Tabletops, Countertops, and Other Surfaces

The first step in cleaning a table or counter is to remove the dishes, glasses, flatware, and trash. If a cart is used for the removal of these items, a separate pan should be used for each item to reduce breakage. Dishes should be placed in the pans quickly, but quietly.

For wiping tables or counters, a cloth which is clean, rinsed, and wrung out should be used. After the table or counter has been wiped, one should check to be sure that no sticky spots remain and that the surface is dry.

After each meal, tabletops and sides or edges and counters should be cleaned with a sanitizing solution. The kind of sanitizing solution used varies from one establishment to another.

Ashtrays, salt and pepper shakers, and sugar containers should be checked and wiped clean. A napkin should be used to wipe the ashtray clean. Ashtrays should be run through the dishwasher periodically. While at the table, the chair seats should be checked, wiped clean with a damp cloth, and dried with a clean cloth.

Other surfaces to keep clean are windows, shelves, glass counters, pie cases, service equipment, and beverage containers. Dusty or dirty surfaces not only affect the customer's or patient's appetite but provide opportunities for bacteria to grow as well.

## Cleaning Floors

Floors must be kept clean for safety and appearance. Floors should be checked constantly for spilled foods and other debris, and spills should be cleaned up immediately. More frequent cleaning of floors is also necessary in all establishments where food is served. Refer to Table 12.2 for suggested procedures on cleaning floors.

**Mopping Procedures.** Cleaning or mopping floors should be done in the most efficient way. Some general guides for floor cleaning to save time and energy include the following:

1. Use two buckets, one filled with clean warm water and one filled with water to which a synthetic detergent has been added.
2. Dip the mop into the bucket with detergent, and wring out until partially dry.
3. Start about two feet from the baseboard and then make a long stroke close to the baseboard. Use a figure-eight motion to gain maximum contact of the mop head with the floor. To remove any stubborn spots, use the heel of the mop.
4. Mop an area about 9 X 12 feet, keeping the mop bucket behind you; rinse and dry the floor; rinse again with a damp mop and allow to dry.
5. Change cleaning solution and rinse water often.
6. When the job is completed, rinse the mop heads and the bucket. Wring the mop heads and hang to dry or put in laundry pick-up area. Store other equipment and supplies in specified areas.

## Floor Care

| Floor Finishes | Care Required |
|---|---|
| Terrazzo — small chips of marble set in cement and polished. | Scrub with detergent solution; rinse and mop dry. Abrasive cleanser may be used occasionally to remove heavy soil and stain. Terrazzo sealer may be applied to areas where traffic is heavy. |
| Ceramic Tile — tiles made from a mixture of clay and water which has been baked at a high temperature; may be either glazed or unglazed. | Sweep with soft brush. Wash with detergent solution; leave suds on long enough to loosen soil; mop; rinse with clean, warm water; mop dry. |
| Asphalt Tile — tiles made from asphalt treated asbestos fibers with an inert filler (usually limestone), ingredients mixed under heat and rolled to uniform thickness with hot rollers. | Sweep with a soft brush. Mop with clean, lukewarm water and mild detergent. Do not use solvent-type cleansers or distillates. |
| Rubber Tile — various types of rubber are heated and rolled out under pressure, then cut into tiles. Caution: Rubber tiles will soften if oil base cleaner or wax is used. | Sweep with a soft brush. Mop with clean, lukewarm water. If soil is not removed, use a small amount of ammonia or non-fat synthetic cleanser. Mop a small section at a time; rinse; dry; buff thoroughly. The more often the floor is buffed, the less often it will need to be washed. |
| Vinyl Tile — similar to rubber tile. A type of plastic which is tough, flexible, and shiny. | Sweep with soft brush. Wash with ordinary cleaning solutions. Rinse and mop dry. |
| Hardwood (waxed) — oak is most commonly used. Beauty is in the grain of the wood. | Sweep with soft brush or dust mop. Wet mop with a mixture of vinegar and water. Most restaurants apply multiple coats of polyurethane to protect the wood. |
| Carpet — heavy, woven, or felted fabric usually with a nap or pile. | Vacuum daily. Remove spots immediately. Shampoo approximately twice a year. Reset or brush pile after shampooing. |

*Table 12.2*

**Stripping and Buffing.** Hard surface floors should be stripped as needed to remove embedded dirt and to prepare the floor for refinishing. Stripping is performed by a combination of chemical action of the cleaning agent and the action of the brush or pad attached to an ***electric floor machine***.

Floors with a ***buffable finish*** may be spray buffed to preserve the floor finish and maintain an attractive shiny surface. ***Spray buffing*** is done with a mild cleaning agent used with the electric floor machine equipped with a soft buffing pad. For some machines, an aerosol can of cleaning agent can be attached to the machine for automatic dispensing of the cleaning agent.

### ◆ *Essential Questions:* ◆
### *Sanitation Requirements*

1. What are the general guidelines for cleaning of equipment?
2. What surfaces in the foodservice facility should be cleaned and sanitized regularly?
3. What care is required for floors in a foodservice facility?

## PEST CONTROL

Any establishment handling food must take measures to eliminate disease-carrying pests. The most common pests in foodservice establishments are insects, rodents, and birds.

### *Insects*

- **Cockroaches:** Cockroaches have flat bodies which enable them to hide in cracks and crevices. Cockroaches are known carriers of salmonella, a bacteria which can cause a disease resulting in severe vomiting, diarrhea, and fever. Cockroaches spread filth and disease. They are sensitive to light and feed on contaminated materials in the dark. Roaches spread germs to anything they touch or to anything that touches any of their discharges. Some signs that cockroaches are present include stains from their droppings, a musty odor, or empty egg cases from which roaches have hatched. You may also see the bugs scurry away when you turn on the lights in a darkened storeroom or food preparation area.

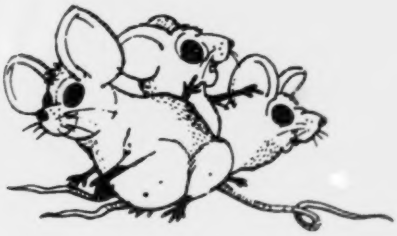
- **Flies:** Flies have an amazing sense of smell, and they are attracted to any type of food or waste odors. A fly spreads germs in three ways: from its body wastes, from its feet and hairy legs, and in its manner of feeding. When eating solid food, the fly spits up a stomach fluid to dissolve the food; this fluid is packed with germs. Flies can transmit a variety of human diseases including typhoid, dysentery, infantile diarrhea, and streptococcal and staphylococcal infections.

- **Ants:** Ants eat a variety of food, particularly sweets and fats, such as syrup and fried foods, and can easily contaminate anything they touch. Ants spread germs by carrying filth and food waste on their legs and bodies.

- **Pantry Pests:** Pantry pests feed on items normally stored in the pantry. These pests include bran beetles, weevils, hide and larder beetles, cereal mites, flour and meal moths, silverfish, and firebrats. Some signs of these pests are the insects themselves, their webbing, clumped food particles, holes in food, or holes in packaging.

### *Rodents*

Rats and mice cause much suffering each year in illness, death, and destruction of property. Both pests can gnaw through wood and squeeze through surprisingly small openings. A one-half inch crack will admit a young rat or an adult mouse. Both dislike open spaces, and they move along walls, leaving a dark, greasy trail. They prefer to take small bits of food into hiding, but they will eat larger items wherever these are found. The presence of droppings, or feces, is one of the signs of rodent infestations. Tracks may be seen on dusty surfaces. Rats and mice transmit disease by the fleas they carry on their bodies and by their urine and feces. Rodents may be involved in the transmission of such diseases as salmonellosis, leptospirosis, and murine typhus.



## Birds

Three birds can be pests to the foodservice operator. These birds are the city pigeon, the English sparrow, and the European starling.

These birds are very much like rats and mice. They depend on what humans discard for food and on human buildings for shelter. The federal law does not protect these birds since they are a problem in sanitation.

Birds are pests to the foodservice industry in several ways. They build their nests in attics and roofs and this creates fire hazards. Their droppings are unsanitary because of their smell and possible contamination of food. Birds carry several human diseases, such as psittacosis (usually occurs as pneumonia accompanied by a high fever) and encephalitis (an inflammation of the brain).

Almost all birds carry mites, lice, or ticks. Mites, which are most common, hide in the nest during the day and feed on the birds at night.

## Destroying and Repelling Pests

The best insurance against pests is to store food properly and to promptly clean up any spilled food. To remain free of pests, the foodservice establishment must take pest control measures on a regular basis. These measures include keeping all windows and doors shut, maintaining proper sanitation and housekeeping inside and outside of the establishment, eliminating the presence of rodents, and cleaning garbage cans and keeping them covered.

Occasionally, these measures are not enough to completely control or eliminate all types of pests. Professional pest control experts should handle the exterminating or repelling of any type of pest. Federally regulated chemicals must be used by a licensed person. If you see any signs of pests in the foodservice establishment, report them to your supervisor immediately. Losses due to customer annoyance, unfavorable publicity, and damage from insects and rodents total several billions of dollars each year.

## Pesticides and Safety

***Pesticides***, which are chemicals used to kill insects, are harmful to humans as well as to insects. For this reason, precautions should be followed when storing, using, and disposing of pesticides. Some precautions that should be followed include:

- Be sure containers are labeled properly.
- Follow directions on the label.
- Do not use around food or people.
- Store in a safe place.
- Rinse and destroy bottles and cans when empty.

### ◆ Essential Questions: ◆
### Pest Control

1. What are the most common pests found in foodservice establishments?

2. Why is it unsanitary for pests to be inside foodservice establishments?

3. What can foodservice personnel do to discourage pests from entering their facilities?

4. What precautions should be followed when storing, using, and disposing of pesticides?

## Chapter Highlights

- Sanitation involves the creation and maintenance of conditions favorable to good health. Clean means absence of visible soil, while sanitary means free of harmful microorganisms or bacteria.
- Sanitary codes are laws or regulations that protect the public's health by setting standards for cleanliness and sanitation. The laws which affect foodservice establishments are enforced by state and local health authorities. Enforcement is done through inspections made by a sanitarian.
- People are the most common source of food contamination. The skin, hands, fingernails, teeth, hair, and clothing are all possible sources of contamination. Personal cleanliness and frequent handwashing are musts for foodservice workers. Sanitary personal habits prevent food contamination and the spread of disease.
- Sanitation in dishwashing by hand or machine is ensured by heat high enough to kill microorganisms or by treatment with a chemical sanitizing compound.
- Equipment must be cleaned and sanitized regularly, especially the food contact surfaces.
- Keeping surfaces clean and sanitary creates a pleasant atmosphere and protects the health of customers or patients. Tabletops and counters should be cleaned and sanitized between uses and at the end of each serving period. Windows, shelves, glass counters, pie cases, service equipment, beverage containers, and floors also require regular cleaning.
- The most common pests in foodservice establishments are cockroaches, flies, ants, and rodents, such as rats and mice. They all carry diseases. The best insurance against pests is to store food properly and to promptly clean up any spilled food.
- Regular pest control measures are also important. Signs of pests in the foodservice establishment should be reported immediately.

# Chapter 13

## Food Safety and Sanitation Techniques

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

6C Interpret laws and policies pertaining to food production and service establishments.

7B Evaluate regulations and standards guiding safety in the food production and service industry.

7G Use appropriate terminology related to the food production and service industry.

8A Comply with government regulations and policies that apply to food safety and sanitation techniques utilized in food production and service.

8B Practice correct sanitation procedures in food production and service operations.

8C Describe foodborne illnesses, their causes, and prevention methods.

8D Explain the implications of temperature on the storage, preparation, and handling of food.

8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.

8G Utilize procedures that protect the environment.

8H Describe environmental factors affecting safe food production.

11H Implement quality assurance standards in all aspects of the food production and service industry.

### Chapter Vocabulary

bacteria
biological hazards
chemical hazards
critical control points
food danger zone
foodborne illness
foodborne infection
foodborne intoxication
Hazard Analysis Control Point (HACCP)
Integrated plant management
microorganisms
molds
physical hazards
time-and-temperature principle
toxins
viruses
yeasts

Food becomes hazardous to health if it is infected with harmful microorganisms, chemicals, or physical hazards. These hazards can be avoided by sanitary food handling.

To reduce the effects of contamination, the growth of microorganisms must be slowed or stopped by refrigeration, or the microorganisms must be destroyed by sufficient heat. At temperatures between 41°F and 140°F (5° to 60°C), microorganisms grow and multiply greatly in a very short time. To prevent microorganisms from growing and multiplying, food must be kept out of this ***food danger zone***. See Figure 13.2 for the effect of temperature on bacterial growth.

## FOODBORNE ILLNESS

According to the Center for Disease Control (CDC), at least 30 million persons in the United States suffer from foodborne illnesses each year. A ***foodborne illness*** is a disease that is carried or transmitted to people by food. More cases of foodborne illness result from food eaten in foodservice establishments than from any other identified source. Other sources of foodborne illnesses include homes and food processing plants. The source of more than 40 percent of all cases is unknown. Food safety is becoming an international concern.

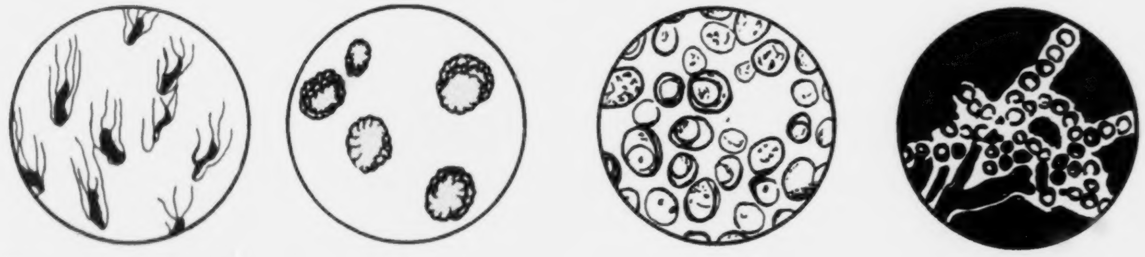
The three hazards responsible for outbreaks of foodborne illness are biological hazards, chemical hazards, and physical hazards. Biological hazards account for the most cases of foodborne illness. Illnesses from chemical and physical hazards occur less frequently but are no less dangerous.

### ***Biological Hazards***

***Biological hazards*** result from harmful microorganisms. ***Microorganisms*** are tiny living cells that can be seen only with a microscope. Microorganisms are everywhere–in our bodies, in the soil, in water, and in the air. The four types of microorganisms which affect food are bacteria, viruses, yeasts, and molds. Refer to Figure 13.1 for a microscopic view of an example of each type of microorganism.

Foodborne illnesses caused by biological hazards are classified as either infections or intoxications. A ***foodborne infection*** is a disease caused by eating food that contains harmful microorganisms. A ***foodborne intoxication*** is an illness caused by poisons, referred to as ***toxins***, in the food a person eats. The toxin may occur naturally in the food, as in certain mushrooms, or the food may be contaminated by toxic wastes produced by certain microorganisms.

**Types of Microorganisms**



Salmonella typhi (Bacteria)

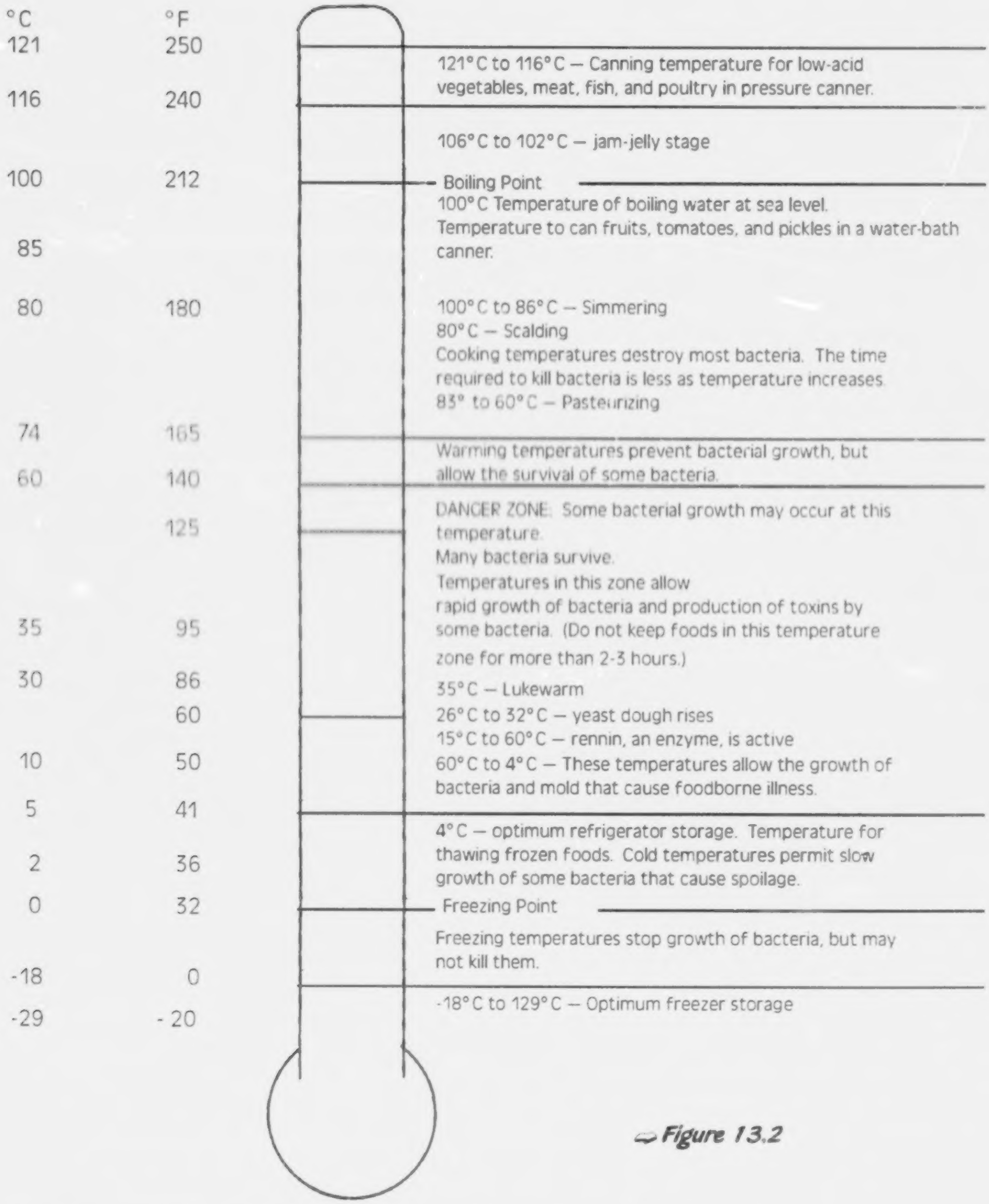
Virus

yeast

Penicillium

*Figure 13.1*

# Effect of Temperatures on Bacterial Growth



| °C | °F |
|---|---|
| 121 | 250 |
| 116 | 240 |
| 100 | 212 |
| 85 | |
| 80 | 180 |
| 74 | 165 |
| 60 | 140 |
| | 125 |
| 35 | 95 |
| 30 | 86 |
| | 60 |
| 10 | 50 |
| 5 | 41 |
| 2 | 36 |
| 0 | 32 |
| -18 | 0 |
| -29 | - 20 |

121°C to 116°C — Canning temperature for low-acid vegetables, meat, fish, and poultry in pressure canner.

106°C to 102°C — jam-jelly stage

Boiling Point

100°C Temperature of boiling water at sea level. Temperature to can fruits, tomatoes, and pickles in a water-bath canner.

100°C to 86°C — Simmering

80°C — Scalding

Cooking temperatures destroy most bacteria. The time required to kill bacteria is less as temperature increases.

83° to 60°C — Pasteurizing

Warming temperatures prevent bacterial growth, but allow the survival of some bacteria.

DANGER ZONE: Some bacterial growth may occur at this temperature.

Many bacteria survive.

Temperatures in this zone allow rapid growth of bacteria and production of toxins by some bacteria. (Do not keep foods in this temperature zone for more than 2-3 hours.)

35°C — Lukewarm

26°C to 32°C — yeast dough rises

15°C to 60°C — rennin, an enzyme, is active

60°C to 4°C — These temperatures allow the growth of bacteria and mold that cause foodborne illness.

4°C — optimum refrigerator storage. Temperature for thawing frozen foods. Cold temperatures permit slow growth of some bacteria that cause spoilage.

Freezing Point

Freezing temperatures stop growth of bacteria, but may not kill them.

-18°C to 129°C — Optimum freezer storage

**Figure 13.2**

Adapted from: *Handbook of Food Preparation* (1995). American Association of Family and Consumer Sciences Reprinted with permission.

**Bacteria** are small, single-celled organisms that can live anywhere people can. They thrive in a warm, moist environment that is neutral or slightly acid. Bacteria are more commonly involved in cases of foodborne illness than are viruses, yeasts, and molds. Common names of some foodborne illnesses of bacterial origin are staphylococcus, botulism, perfringens poisoning, and salmonellosis. Table 13.1 lists information about these diseases. Emerging pathogens (bacteria) that have caused foodborne illnesses within the last 15 years are listed in Table 13.2. These include Campylobacteriosis, E.Coli 0157:H7, and Norwalk virus.

Trichinella is a foodborne disease caused by a parasite and affects the muscles of the body. It is caused from eating undercooked pork. The Pork Producers Council recommends cooking pork to an end temperature of 160°F (medium) and 170°F (well done).

**Viruses** are the smallest and perhaps the simplest form of life known. They cause illnesses such as colds, influenza, and infectious hepatitis. Unlike bacteria, viruses cannot grow and multiply on their own but must depend on a living host to reproduce. For this reason, viruses do not increase in number while they are in food. The food merely transports the viruses, which may then lodge themselves in the human host and produce abundantly.

Viruses seem to vary in their reaction to heat and cold. The influenza virus is very sensitive to heat. Another type of virus shown to survive in food at temperatures as high as 176°F (80°C) and remain active after storage in a refrigerator for over a year is the Norwalk virus. The Norwalk virus is becoming a health threat in the US from ingestion of contaminated water and shellfish from polluted water. The Norwalk virus multiplies in the intestinal tract of humans.

**Yeasts** are fungi that require sugar and moisture for survival. Yeasts often consume these ingredients in food products and spoil the food in the process. Yeast organisms can be killed by heating to 136°F (56°C) for fifteen minutes. In general, yeast spoilage can often be recognized by the presence of bubbles and an alcoholic smell or taste. Yeast spoilage can create a slime on pickle brine or fruit juices or a pink discoloration in cottage cheese. However, no evidence suggests that yeast producing diseases in humans are transmitted by food or that yeast occurring naturally in foods are harmful to human beings. Yeast is used in the foodservice industry to ferment bread, beer, and wine.

Like yeasts, molds are a fungi that may be harmful to humans. **Molds** are a furry looking fungi that can grow on almost any food at almost any storage temperature, under almost any conditions moist or dry, acid or nonacid, salty or sweet. Most molds can be killed by heating them to 140°F (60°C) for ten minutes. Freezing prevents the growth of molds but will not kill those already present in food. Some molds impart a musty odor and flavor to foods. Food molds are not known to be dangerous to humans, but certain molds produce toxins that have been known to cause cancer in animals. Some people have developed allergies to certain molds. These allergies affect the sinuses, eyes, ears, and respiratory tract.

## Chemical Hazards

Chemical hazards are the contamination of food from some type of chemical. Chemical contamination of food can occur anywhere in the food supply chain – including contamination by pesticides used in agriculture. Two types of **chemical hazards** controlled by the

## Common Foodborne Illness of Bacterial Origin

| Illness | Bacteria Responsible | Description | Habitat | Types of Foods | Symptoms | Cause | Temperatue Sensitivity |
|---|---|---|---|---|---|---|---|
| **Staphylococcal intoxication** | Staphylococcus aureus | Produces a heat-stable toxin. | Nose and throat of 30 to 40% of healthy population; also on skin and superficial wounds. | Meat and seafood salads, sandwich spreads, and high-salt foods. | Nausea, vomiting, and diarrhea within 4 to 6 hours. No fever. | Poor personal hygiene and subsequent temperature abuse. | No growth below 40°F. Bacteria killed by normal cooking. |
| **Salmonellosis infection** | Salmonella | Produces an intestinal infection. | Intestinal tracts of animals and humans. | High-protein foods — meat, poultry, fish, and eggs. | Diarrhea, nausea, chills, vomiting, and fever within 12 to 24 hours. | Contamination of ready-to-eat foods, insufficient cooking, and recontamination of cooked foods. | No growth below 40°F. Bacteria are destroyed by normal cooking. |
| **Perfringens poisoning infection** | Clostridium perfringens | Produces a spore and prefers a low-oxygen atmosphere. Live cells must be ingested. | Dust, soil, and gastrointestinal tracts of animals and humans. | Meat and poultry dishes, sauces, and gravies. | Cramps and diarrhea within 12 to 24 hours. No vomiting or fever. | Improper temperature control of hot foods and recontamination. | No growth below 40°F. Bacteria are killed by normal cooking, but a heat-stable spore can survive. |
| **Botulism intoxication** | Clostridium botulinum | Produces a spore and requires a low-oxygen atmosphere. Produces a heat-sensitive toxin. | Soil, plants, marine sediment, and fish. | Home-canned foods. | Blurred vision, respiratory distress, and possible death. | Improper methods of home-processing foods. | Type E and type B can grow at 38°F. Bacteria destroyed by cooking and the toxin is destroyed by boiling for 5 to 10 minutes. Heat-resistant spore can survive. |
| **Listeriosis infection** | Listeria monocytogenes | Survives adverse conditions for long time periods. | Soil, vegetation, and water. Can survive for long periods in plant materials. | Milk, soft cheeses, and vegetables fertilized with manure. | Mimics meningitis. Immuno-compromised individuals most susceptible. | Contaminated raw products. | Grows at refrigeration (38°F to 40°F) temperatures. May survive minimum pasteurization temperatures (161°F for 15 seconds). |

Adapted from: *Bacterial Food Poisoning*. Al B. Wagner, Jr., Texas Agricultural Extension Service, The Texas A&M University System.

***Table 13.1***

BEST COPY AVAILABLE

## Foodborne Illness: Emerging Pathogens

| Illness | Bacteria | Description | Habitat | Types of Foods | Symptoms | Cause | Temperature Sensitivity |
|---|---|---|---|---|---|---|---|
| Campylobacter infection | campylobacter jejuni | Produces a powerful toxin resulting in severe illness. | Intestinal tract of humans; animals, especially cattle | Raw and undercooked beef and other red meats, imported cheeses, unpastuerized milk, raw finfish, cream pies, mashed potatoes, and other prepared foods. | Bloody diarrhea, severe abdominal pain, nausea, vomitting, diarrhea, and occasionally fever. | Under cooked red meat, raw fish, unpastuerized dairy products, contaimnated food and water supply, fecal contamination by food handlers. | Temperature above 160°F required to kill bacteria. |
| Ecoli infection/ intoxication | Escherichia coli | A group of spiral-shaped bacteria that cause disease in humans and animals. | Domestic and wild animals | Raw vegetables, unpasteurized milk and pair products, poultry, pork, beef, and lamb. | Diarrhea, fever, nausea, abdominal pain, headache. | Insufficient cooking, cross-contamination, contaminated raw products. | Temperatures above 170°F for breast meat of poultry and 180°F for thigh meat of poultry required to kill bacteria. |
| Norwalk virus illness | Norwalk and Norwalk-like agent | The prototype of a family of small, round-structured viruses causing gastroentermitis. | Humans (intestinal tract) | Raw vegetables, prepared salads, raw shelfish, and water contaminated from human feces. | Nausea, vomitting, diarrhea, abdominal pain, headache, and low-grade fever. | Contaminated food and water supply, fecal contamination from food handlers due to poor personal hygiene, insufficient cooking. | Cooking temperatures at boiling or above are adequate to inactivate the virus. |

Source: *Applied Foodservice Sanitation* (p.48) by the Educational Foundation of the National Restaurant Association, 1992.

***Table 13.2***

foodservice manager within the foodservice establishment are the following:

- pesticides and other chemicals
- toxic metals

**Pesticides and Other Chemicals.** Foods can be accidentally contaminated with pesticides and other chemicals. The foodservice manager can help prevent pesticide contamination in the food supply by purchasing food only from reputable, legally approved sources. Another step toward preventing pesticide contamination is to wash all fresh fruits and vegetables, no matter what the source. ***Integrated plant management (IPM)*** is a new approach being used in agriculture to carefully monitor the use of pesticides.

Use of food additives and preservatives is debatable but excessive amounts should be avoided. Monosodium glutamate (MSG) has been linked with "Chinese Restaurant Syndrome" caused by reactions in individuals sensitive to MSG. Sulfite sprays on fruits and vegetables are prohibited by the Food and Drug Administration (FDA).

The foodservice manager can and must prevent contamination of food by chemicals within the foodservice establishment. Germicides and pesticides should be labeled properly, kept in their original containers, and stored separately from food and food-contact materials. Pesticides have caused poisoning when they were accidentally mixed into flour, sprayed onto cooked cereal, and mistaken for baking soda.

Many other chemicals commonly found in foodservice establishments are poisonous to humans. Detergents, polishes, cleaning agents, and other products of this type should never come into contact with food and should be stored under safe conditions away from the food supply. Label directions on chemical products should be carefully followed. Food poisonings have occurred when drain cleaner, paint remover, and silver polish have contaminated food.

**Toxic Metals.** When certain metals come into contact with certain foods, contamination results and illness occurs when the foods are eaten. Poisoning can result when high-acid foods are prepared or stored in copper or brass containers, in galvanized (zinc-coated) containers, or in some containers of gray enamelware. Foods implicated in metal poisonings are sauerkraut, tomatoes, fruit gelatins, lemonade, and fruit punches.

Enamelware coated with lead glaze, tin milk cans used to store fruit juices, and copper water lines accidentally exposed to carbonated beverages in vending machines have also contributed to chemical food poisoning incidents. Uncovered meats can become poisoned through contact with refrigerator shelves containing cadmium. To prevent such accidental poisonings, use containers only for the purposes for which they are intended. Lead or lead-based products should never be used in foodservice.

## Physical Hazards

Physical hazards are incidents in which food is contaminated because of careless foodservice workers. Most ***physical hazards*** in food handling and service can be eliminated by careful inspection and maintenance of food contact surfaces and equipment and by training of personnel in safe operating procedures. Physical contaminants such as chips of glass from broken light fixtures or glassware and metal fragments from kitchenware and tableware are obvious dangers that can be prevented by alert foodservice employees. Ice should never be scooped with a glass or a glass container since the glass may chip, leaving slivers of glass in the ice.

### ◆ Essential Questions: ◆ Foodborne Illness

1. What is a foodborne illness?
2. What three types of hazards are responsible for outbreaks of foodborne illness?
3. Which of these hazards accounts for most foodborne illness?
4. What types of microorganisms affect food?
5. What is the difference between a foodborne infection and a foodborne intoxication?

## SANITATION, FOOD PREPARATION, AND SERVICE

Food must be protected from contamination in every step from purchasing to preparation and storage, including storage of leftover foods. All foods, including refrigerated and frozen foods, need to be purchased from reputable sources. Customers must be protected from foodborne illness. Several general sanitation guidelines should be followed by food preparation personnel. However, the most important rule in food sanitation is the time-and-temperature principle.

### Time-and-Temperature Principle

The most important rule for protecting food during preparation, storage, and service is the ***time-and-temperature principle***. This rule requires that all potentially hazardous food be kept at an internal temperature below 41°F (5°C) or above 140°F (60°C) during display and service. The food danger zone refers to the range between 41°F (5°C) and 140°F (60°C). Stated simply, the time-and-temperature principle means keep hot foods hot, keep cold foods cold. See Figure 13.2 for recommended temperatures important in food sanitation and preventing foodborne illness. The four temperature zones include:

- Freezing, defrosting, and chilling zones: Food intoxication and infections should be prevented.
- Growth or hazardous zone: Bacterial multiplication may occur.
- Hot holding zone: Multiplication is prevented but does not kill organisms.
- Cooking zone: Destroys organisms rapidly.

Hot foods must be held above 140°F (60°C). Thermometers should be used to check the temperature of the food product to be sure that hot-holding equipment is working properly. Containers should be covered to protect against splash and spillage and to retain heat. Proper utensils must be used for portioning and serving. Long-handled ladles, dippers, and similar utensils keep the server's hands away from the food. Serving utensils should be stored properly, not left in the pot where the handle may contaminate the food. Extended holding of hot foods increases the risk of promoting bacterial growth. Four hours is the limit for leaving food in the danger zone range and two hours is the limit for leaving food in the 60-100°F range.

### Food Preparation Guidelines

During food preparation, the following guidelines should be observed:

- Clean raw foods thoroughly.
- Defrost frozen foods according to accepted procedures. The four acceptable methods for thawing frozen food are (1) under refrigeration, (2) under 70°F running water, (3) as part of the conventional cooking process, and (4) in a microwave oven.
- Exercise special care in mixing raw and cooked ingredients, as in salads, sandwich spreads, egg custards, meringues, eggnog, or cream-filled pastries, especially if the product will not be cooked again.

- Cook poultry, stuffed meat, and all stuffing to an internal temperature of 165°F (73.9°C) without any interruption in the cooking process.
- Cook pork and any food containing pork such as sausage or bacon until all parts are heated to at least 150°F (65.6°C).
- Cook rare roast beef and rare beef steak to a final internal temperature of 130°F (54°C).
- Use a thermometer to check the temperature of products before the cooking process is ended.
- Avoid licking the fingers during food preparation or putting the tasting spoon back into food after using it for tasting. Employees need to practice personal cleanliness including frequent and proper hand washing.
- Stir stew-like mixtures frequently so that every particle of the mixture is completely cooked.
- Refrigerate batters, breading, and similar coatings when not actually in use or else discard. Expose these potentially hazardous items to danger-zone temperatures as little as possible.
- Foods that are potentially hazardous usually contain protein such as meat, poultry, seafood, eggs, milk, and other dairy products. Cooked rice, beans, and potatoes, as well as cut melons, garlic in oil mixtures, and raw alfalfa sprouts also are included.
- To avoid cross-contamination, thoroughly clean and sanitize cutting boards and knives used to cut raw meat and poultry immediately after use. Also wash your hands thoroughly. Salmonella bacteria frequently are present in raw meat and poultry, so do not use the same utensils for these foods and any other food product. Heat will destroy the bacteria in the products to be cooked, but the foods to be served raw may be contaminated if the same utensils are used for both. It is best to maintain separate cutting boards and utensils for raw and cooked products.
- Control contamination where customers serve themselves, such as salad bars or cafeteria counters. Sneeze guards can help prevent the spread of bacteria.

### Leftovers

Leftover foods must be managed carefully. Foods most frequently associated with foodborne illnesses, such as custards, puddings, and creamed casseroles, should be discarded. Do not leave coffee cream at room temperature on a table or counter. Many other foods can be kept for twenty-four hours if proper methods of holding and reheating are used. All cooked, perishable leftovers should be chilled to an internal temperature of 41°F (5°C) or below within two to four hours. Use a thermometer to determine the temperature of the food. See Table 13.3 and Figure 13.3 for different types of thermometers used in foodservice.

**◆ Essential Questions: ◆**
**Sanitation, Food Preparation, and Service**

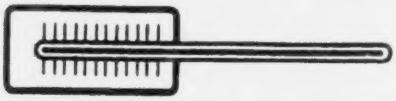
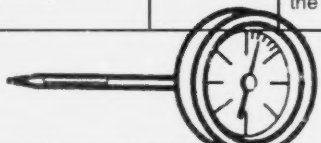
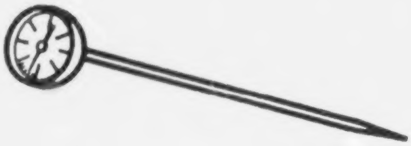
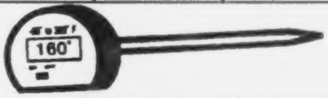
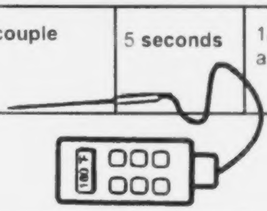
1. What is the time-and-temperature principle?
2. What are the guidelines for managing leftover foods?

## HAZARD ANALYSIS CRITICAL CONTROL POINT MODEL

The ***Hazard Analysis Critical Control Point (HACCP)*** refers to a quality control food safety system. The HACCP process consists of seven steps to prevent foodborne illness. Critical control points (CCPs) are identified throughout the purchasing and receiving, storage, preparation, holding, and serving periods. The seven steps of the HACCP system include:

1. Review your menu to identify potentially hazardous foods.

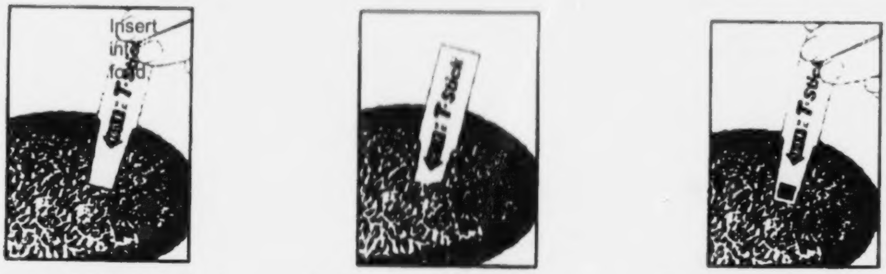
## Thermometers Used in Foodservice

| Types of Thermometers | Speed | Placement | Usage Considerations |
|---|---|---|---|
| Liquid-filled | 1 to 2 minutes | At least 2 inches deep in the thickest part of the food | • Used in roasts, casseroles, and soups<br>• Can be placed in a food while it is cooking<br>• Cannot measure thin foods<br>• Calibration cannot be adjusted<br>• Possible breakage while in food<br>• Heat conduction of metal shield can cause false high reading |
|  | | | |
| **Bimetal** (oven-safe) | 1 to 2 minutes | 2 to 2 1/2 inches deep in the thickest part of the food | • Can be used in roasts, casseroles, and soups<br>• Can be placed in a food while it is cooking<br>• Not appropriate for thin foods<br>• Heat conduction of metal stem can cause false high reading |
|  | | | |
| **Bimetal** (instant-read) | 15 to 20 seconds | 2 to 2 1/2 inches deep in the thickest part of the food | • Can be used in roasts, casseroles, and soups<br>• Use to check the internal temperature of a food at the end of cooking time<br>• Can be calibrated<br>• Cannot measure thin foods unless inserted sideways<br>• Cannot be used in an oven while food is cooking<br>• Temperature is averaged along 2-3 inch of problem<br>• Readily available in stores |
|  | | | |
| **Thermometer** (digital) | 10 **seconds** | At least 1/2 inch deep in a food | • Gives faster reading<br>• Can measure temperature in thin foods<br>• Digital face easy to read<br>• Cannot be used in an oven while food is cooking<br>• Available in "kitchen" stores |
|  | | | |
| **Thermocouple** (digital) | 5 **seconds** | 1/4 deep, or deeper, as needed | • Fastest<br>• Can quickly measure even the thinnest foods<br>• Digital face easy to read<br>• Can be calibrated<br>• More costly, may be difficult for consumers to find in stores |
|  | | | |

Source: *Food Preparation for the Professional*, D. Mizer, M. Porter, B. Sonnier, and K. Drummond, Copyright © 2000 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

*Table 13.3*

## Monitoring the Temperature of Hamburgers with a T-stick 160 While Cooking



1. Insert with plastic-coated end of T-stick into the center of the hamburger to be tested. Do not remove the protective plastic coating. Wait 5 seconds.

2. Remove T-stick from hamburger. If plastic-coated end has turned black, temperature of food has reached 160°F (71°C). T-stick can be discarded.

3. If plastic-coated end still white, food has not yet reached 160°F (71° C). Cook further and repeat steps 1 and 2, using the same T-stick in the same hamburger.

Source. ECOLAB Inc. All Rights Reserved. Reprinted with permission.

*Figure 13.3*

2. Observe those foods throughout your preparation, holding, and serving to identify critical control points. A ***critical control point*** is any point, step, or procedure in which a food safety hazard can be prevented, eliminated, or reduced.
3. Establish control procedures and critical limits. Critical limits are the criteria that must be met for each control procedure. A critical limit is frequently stated as a temperature range, such as at or below 41°F, or a time limit.
4. Establish monitoring procedures to adjust the process and maintain control. Typical monitoring procedures, such as temperature readings or visual observations, must be recorded.
5. Establish corrective actions to be taken when monitoring indicates that there is a deviation from an established critical limit. For example, this may involve disposing of the food.
6. Establish effective record-keeping procedures of the HACCP system.
7. Establish procedures to verify that the HACCP plan or system is working, such as regular review of records.

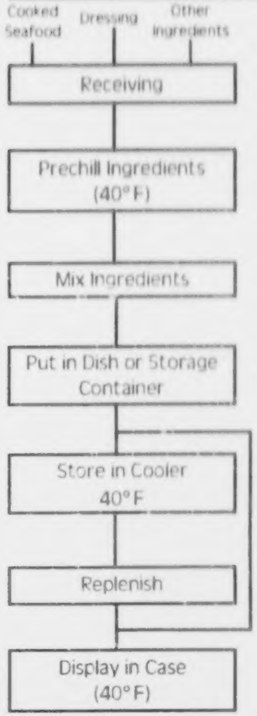
An example of a HACCP flow chart for seafood salad is shown in Figure 13.4.

### ◆ Essential Questions: ◆
### Hazard Analysis Critical Control Point Model

1. When referring to quality control of food safety, what is meant by "critical control point"?
2. Why does HACCP work as a quality control system in the foodservice industry?

BEST COPY AVAILABLE

## HACCP Flow Chart for Seafood Salad



| Flow Chart | Potential Hazards | CCP Critical Limits | Monitoring Procedures | Corrective Action |
|---|---|---|---|---|
| Receiving | Rapid bacterial growth; contamination; foreign objects | CCP Chilled items below 40°F; frozen items with no signs of thawing; no spoilage, contamination, or foreign objects | Visual inspection; Measure/record temperature | Reject thawed frozen items, chilled items above 40°F, and items with spoilage, contamination, or foreign objects |
| Prechill Ingredients (40°F) | Rapid bacterial growth | CCP Chill in shallow plans to below 40°F | Measure/record cooler air temperature every 4 hrs. | Adjust thermostat |
| Mix Ingredients | Contamination | CCP Minimize hard contact use clean utensils | Observe employee and handling practices | Modify Standard Operating Procedures (SOPs) and production practices |
| Put in Dish or Storage Container | Contamination | CCP Use clean dish or container | Observe employee and handling practices | Modify Standard Operating Procedures (SOPs) and production practices |
| Store in Cooler 40°F | Rapid bacterial growth | CCP Product below 40°F | Measure/record cooler air temperature every 4 hrs. | Adjust temperature; stir |
| Replenish | Contamination | CCP Avoid hand contact | Observe employee and handling practices | Modify Standard Operating Procedures (SOPs) and production practices |
| Display in Case (40°F) | Rapid bacterial growth | CCP Product below 40°F | Measure/record temperature every 2 hrs. | Adjust thermostat; stir |

☐ = **Critical Control Point**

Source: *The HACCP Food Safety Manual*, Joan Loken, Copyright 1995 by Joan Loken. Reprinted by permission of John Wiley and Sons, Inc.

*Figure 13.4*

## Chapter Highlights

- A foodborne illness or disease that is transmitted to people by food is most likely to result from harmful microorganisms. The four types of microorganisms that affect food are bacteria, viruses, yeasts, and molds. Foodborne illnesses caused by biological hazards, such as harmful microorganisms, are classified as either infections or intoxications.

- Bacteria are more commonly involved in cases of foodborne illness than are viruses, yeasts, and molds. Bacteria thrive in a warm, moist environment that is neutral or slightly acid. Common foodborne illnesses of bacterial origin are staph, botulism, perfringens poisoning, and salmonellosis.

- Viruses cause illnesses, such as colds, influenza, and infectious hepatitis. Viruses depend on a living host to reproduce. Viruses do not increase in number while they are in food. The food merely transports the viruses to a human host.

- Yeasts and molds are fungi that can be harmful to humans. Yeast spoilage can often be recognized by the presence of bubbles and an alcoholic smell or taste.

- To reduce the effects of contamination, the growth of microorganisms must be slowed or stopped by refrigeration or destroyed by sufficient heat. The danger zone for growth and reproduction of microorganisms is 41° to 140°F (5°- 60°C).

- Chemical hazards in foodservice include accidental contamination of food with pesticides and other chemicals and contamination of food with toxic metals.

- Most physical hazards in foodservice can be eliminated by proper maintenance of equipment and by training of personnel in safe operating procedures.

- The time-and-temperature principle requires that all potentially hazardous food be kept at an internal temperature below 41°F (5°C) or above 140°F (60°C) during display and service. In other words, keep hot foods hot, keep cold foods cold.

- Food must be protected from contamination in every step of preparation and storage. Leftover foods must also be managed carefully.

# Chapter 14

## Nutrition Matters

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9G Apply nutrition principles in planning, preparation, and presentation for food production operations.

### Chapter Vocabulary

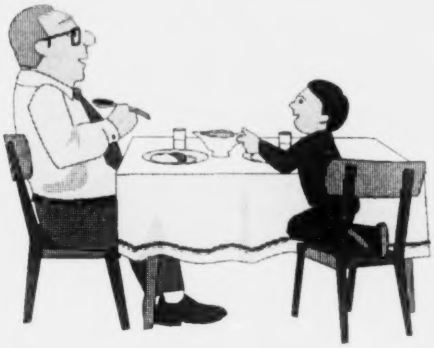
- amino acids
- calories
- carbohydrate
- cholesterol
- complete protein
- Daily Reference Values (DRV)
- Dietary Guidelines for Americans
- Dietary Reference Intakes (DRI)
- empty-calorie foods
- fat
- fat-soluble vitamins
- fiber
- Food Guide Pyramid
- food security
- incomplete protein
- Kosher foods
- lipidsminerals
- nutrients
- Nutrition Facts
- Pattern for Daily Food Choices
- phytochemicals
- protein
- Recommended Dietary Allowances for Americans (RDA)
- Reference Daily Intake (RDI)
- vitamins
- water
- water-soluble vitamins

Some foodservice operations are more concerned with nutrition than others. Health care facilities, schools, and residence facilities are responsible for meeting the nutritional needs of those they feed. Commercial restaurants are usually less concerned with the nutritional needs of customers as opposed to institutional foodservice operations. However, some commercial restaurants are now including items which appeal to persons concerned about nutrition, especially to those on a weight-loss diet. Regardless of the menu, all foodservice establishments should prepare and serve food in a way that retains nutrients.

## FUNCTIONS OF FOOD

Food provides the body with the fuel it needs for creating heat and energy. Just as an engine cannot run without fuel, neither can the body function without food. Besides providing the energy needed to make the body move and making heat to keep it warm, food builds, repairs, and maintains the body. For example, food is necessary for repairing and replacing body cells and for manufacturing digestive juices. It also regulates body processes.

People use food to meet physical, social, and emotional needs. These uses of food explain why people sometimes eat even though their bodies do not need the fuel. Emotional stress sometimes causes a person to use food as comfort to overcome unhappiness or nervousness. Food can serve as a substitute for security, acceptance, or love. If food is used frequently as a substitute for other needs, emotional and physical health are threatened.



Understanding the effects of emotions on eating habits is helpful in working with people in a commercial foodservice establishment, hospital, long-term care facility, school, or day care center. Many times people may refuse food or complain about it in order to gain attention or because it is one part of their day they feel they can control. The wise foodservice employee shows patience and understanding in working with such persons.

Food also serves social needs. A foodservice customer may behave differently, choose different foods, and spend more or less money when dining alone, when dining with family, when dining with business associates, or when dining with friends. For example, a customer on a low-calorie diet may order low-calorie foods when dining alone or with family but order higher calorie foods in the presence of business associates or friends. Foodservice establishments offer menu items that meet the valued social needs of their customers.

◆ ***Essential Questions:*** ◆
***Functions of Food***

1. What are the functions of food?
2. How are emotional and social needs met by food?

## THE ESSENTIAL NUTRIENTS

Nutrients supply the body with the nourishment needed to sustain life. ***Nutrients*** are chemical substances found in food, and each nutrient has a specific function in the body. The six essential nutrients needed by the body include proteins, carbohydrates, fats, vitamins, minerals, and water. Like the gasoline which fuels an automobile, the first three produce energy for the human body.

The energy value of food is measured in ***calories***. The more calories a food contains, the more energy it produces. Fat produces the most energy or calories when burned, more than twice as much as the same amount of carbohydrates or protein. Minerals, vitamins, and water do not produce energy but are important for body regulation, maintenance, and growth.

No single food contains all the nutrients needed for life. Eating a wide variety of foods every day is important to ensure that the body gets all of the nutrients it needs to function efficiently.

## Protein

***Protein*** is essential to life. Protein is found in every cell of the body. It is necessary for growth, repair, and maintenance of the body. The body needs protein to form muscles, bone, and blood. It is needed for repairing body tissues. It is necessary for making new cells until a person reaches adulthood, then for replacing worn-out or injured cells. Protein makes up the antibodies which help fight infection. It is contained in some of the hormones that regulate chemical reactions in the body. Protein makes up enzymes, which are substances that speed up or slow down chemical reactions in the body. In addition, it helps control the balance of water in the body. Finally, it provides energy, but if a person eats more protein than their body needs, it is broken down and stored as fat.

**Amino Acids.** Protein is made up of smaller building blocks called ***amino acids***. Scientists have identified more than twenty amino acids. Nine of the amino acids, called essential amino acids, cannot be manufactured by the body. The body must get these essential amino acids from foods. The other nonessential amino acids can be manufactured by the body.

**Quality of Protein.** Some foods contain adequate amounts of all nine essential amino acids, others do not. To be considered a ***complete protein***, a food must contain the essential amino acids in amounts adequate for the growth and repair of body cells. Animal sources, such as meat, eggs, fish, poultry, and milk, are excellent sources of complete protein. An ***incomplete protein*** food does not have all nine essential amino acids. The proteins found in dried beans and peas, nuts, cereals, and breads are examples of incomplete protein. Foods with incomplete protein may be combined or eaten together to increase the number of essential amino acids provided.

**Effects of Cooking.** Protein's ease of digestion is affected by cooking. Protein coagulates, which means the protein in a substance changes from a fluid state to a thickened state. Cooking a protein food a long time with dry heat or with high heat toughens the protein. Most protein foods should be cooked at a low heat until done. However, some types of meat cookery, such as broiling, use high heat and short cooking time. Only tender cuts of meat and ground meat should be cooked by this method.

## Carbohydrates

***Carbohydrates*** are the body's main source of energy. It helps the body use protein and fat more efficiently. If too little carbohydrates are eaten, the body uses fat and protein for energy. Inadequate intake of carbohydrates may result in an acid condition in the blood called ketosis. Using protein instead of carbohydrates for energy may deprive the body of the protein needed for growth, repair, and maintenance. If too many carbohydrates are consumed, it is stored in the body as fat.

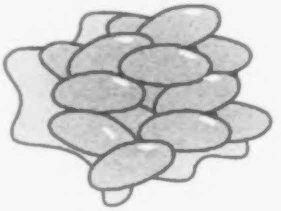
Three types of carbohydrates are found in food: sugars, starches, and cellulose. These carbohydrates differ in their chemical structure and are found in different foods. The sugars are known as simple carbohydrates, and the starches and fiber are known as complex carbohydrates. Fifty to fifty-five percent of calories should come from complex carbohydrates.

**Sugars.** Sugars are simple forms of carbohydrates. Carbohydrates may be either simple sugars, monosaccharides, or double-sugars, disaccharides. Disaccharides are formed when two glucose molecules are joined together. Both supply the same amount of food energy.

Simple sugars include glucose, fructose, and galactose. Glucose is the most common type of simple sugar. It occurs naturally in some fruits and vegetables. This is also the type of sugar produced when sugars and starches are broken down by digestion.

Disaccharides include sucrose, lactose, and maltose. Disaccharides are broken down into monsaccharides during digestion.

**Starches.** Starch, a polysaccharide, is the most complex form of carbohydrates. It is made up of a combination of many kinds of sugar. Starch is found in roots, grains, vegetables, and legumes (peas and beans).



**Cellulose.** Cellulose is a complex carbohydrate found in plant cells. Cellulose, sometimes called ***fiber*** or roughage, is made up of indigestible fibers. It does not supply energy to the body. Instead, it provides bulk to aid digestion and aids in the elimination of body wastes. The major sources of fiber include green leafy vegetables, stalks of vegetables, seeds, the skins of fruits and vegetables, and whole grain cereals. Many people in the United States eat too little fiber because much of the food they eat is highly processed.

**Effects of Cooking.** In cooking, sugars dissolve in water. Starches mix with water and thicken when cooked. The water used to cook fruits and vegetables can be used in soups, sauces, and gravies to prevent the loss of carbohydrates dissolved in the cooking water. Foods high in fiber are softened by cooking.

## ***Fat***

***Fat*** is a concentrated source of energy. Fat provides more energy per gram than any other nutrient. Its main function is to supply energy for heat and the body's activities. Fat carries the fat-soluble vitamins, Vitamins A, D, E, and K, through the body. The body can only use these vitamins if fat is available to provide the transportation through the body. Some fat is stored in the body. Body fat, or adipose tissue, provides insulation to keep the body at a constant temperature. It also helps protect such vital organs as the kidneys from injury and helps hold them in place.

The scientific name for fat and fat-like substances is ***lipids***. Fat is a compound made up of fatty acids, which is lipids in the simplest forms, and glycerol, a body chemical. The body can manufacture most fatty acids. Like some of the amino acids which make up protein, some fatty acids cannot be manufactured by the body. These essential fatty acids must be obtained from food.

**Types of Fat.** Fat is either saturated, unsaturated, or polyunsaturated. These terms refer to the amount of hydrogen in the chain-like chemical structure of fat. Saturated fats have the most hydrogen. Unsaturated fats have less hydrogen and polyunsaturated fats the least hydrogen. These differences affect the appearance of fat at room temperature.

The more saturated the fat is, the more solid it is. Animal fats, the most saturated fats, are the most solid at room temperature. Unsaturated vegetable fats in the form of shortening are less solid. Polyunsaturated oils are liquid. Sometimes manufacturers add hydrogen to oil, or hydrogenate it, to make it more solid at room temperature. For example, margarine may be made from hydrogenated polyunsaturated oils.

**Cholesterol.** *Cholesterol* is an odorless, soft substance found in every cell in the human body. Cholesterol performs several functions in the body, such as aiding in digestion, contributing to the structure and function of cell membranes, and assisting in the manufacture of vitamin D when the skin is exposed to sunlight. Cholesterol also assists in the manufacture of many hormones and contributes to blockage in the arteries known as atherosclerosis. Individuals whose blood contains high levels of cholesterol may have a greater risk of heart disease than other people. Therefore, dietitians recommend that adults limit their fat intake to 30 percent of total daily calories.

Dietary cholesterol is found only in foods of animal origin. Foods high in cholesterol are egg yolks, liver and other organ meats, shellfish, lard from animals, and butter. Foods that contain no dietary cholesterol or are low in cholesterol include egg whites, fruits, vegetables, grains, and grain products. One of the major factors in blood cholesterol levels is the dietary intake of fats— particularly saturated fats.

**Effects of Cooking.** Cooking has little effect on the nutritive value of fat except at very high temperatures. Fat which is allowed to smoke at high temperatures may give food a disagreeable taste and make it more difficult to digest.

## Vitamins

***Vitamins*** are organic compounds necessary for normal growth, maintenance of health, and reproduction. Vitamins help the body convert carbohydrates and fat into energy and assist in the formation of bones and tissues. Vitamins are essential for maintaining good health as the body cannot survive without them.

The ***fat-soluble vitamins***, A, D, E, and K, dissolve in fat. When more fat-soluble vitamins are eaten than needed by the body, they are stored in the body. Most of the excess is stored in the liver. When the body does not get enough of these vitamins, it uses any stored fat-soluble vitamins to meet its needs. If large amounts of fat-soluble vitamins are eaten, the amounts stored in the body can build up to harmful levels. Fat-soluble vitamins are not easily lost in cooking. They neither dissolve in cooking water nor are destroyed by heat.

The ***water-soluble vitamins*** are vitamin C and the B complex vitamins— thiamin, niacin, and riboflavin. These vitamins dissolve in water. They cannot be stored in the body. Excess amounts become part of body wastes. Because they are not stored, these vitamins must be supplied by the diet each day. Water-soluble vitamins are easily lost during the storage and preparation of food. Store vitamin C foods in a cool, dark place in a covered container. Prepare, cook, and serve foods as quickly as possible. Soaking fruits and vegetables in water allows water-soluble vitamins to be lost. Instead, fruits and vegetables should be washed with a cold water spray before cutting or chopping. To minimize vitamin loss during cooking, fruits and vegetables should be cooked in large pieces in as little water as possible only until done. The cooking water should be saved or used in soups, sauces, and gravies. Soda should not be added to green vegetables when cooking because it will destroy water-soluble vitamins.

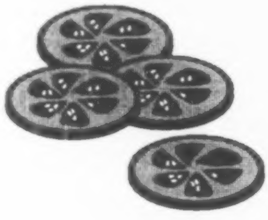
**Vitamin A.** Like all vitamins, vitamin A has several important functions in the body. Vitamin A is especially important in maintaining healthy skin and hair. It helps keep the mucous membranes, which are the linings of the mouth, throat, lungs, eyes, and other body openings, healthy. It helps the body resist infections. Vitamin A helps the eyes adjust to sudden changes in light. Persons who do not get enough vitamin A may find it difficult to drive at night because their eyes will not adjust quickly to the changes in light caused by oncoming cars. This problem is called night blindness.

Vitamin A is found in deep yellow-orange and deep green vegetables. The deep color in vegetables is usually, but not always, caused by carotene. Carotene is a substance which is converted to vitamin A in the body. Deep yellow-orange vegetables include sweet potatoes, carrots, and winter squash. Deep yellow fruits include cantaloupe, papayas, peaches, and apricots. The deep-green vegetables include leafy vegetables, such as broccoli, collard greens, mustard greens, and spinach. Carotene also causes the yellow coloring in butter, cream, and egg yolks. Liver is another animal source of vitamin A. All of these foods are excellent sources of vitamin A.

**Vitamin D.** Vitamin D is important for normal growth and development of bones and teeth. Vitamin D aids in the absorption and utilization of minerals. It also maintains the level of calcium needed in the blood for clotting and keeping the heart, muscles, and nerves active. Vitamin D is often called "the sunshine vitamin." The body converts ultraviolet rays absorbed from the sunlight into vitamin D. Depending on where you live, the body may not get enough sunlight to make all of the vitamin D it needs. For this reason, vitamin D is added to all processed milk. Such milk is said to be fortified with vitamin D. Fortified means that nutrients which were not originally present have been added to improve the nutritional value of the food.

**Vitamin E.** Vitamin E helps protect cell membranes and vitamin A from being damaged by too much oxygen. Claims have been made that vitamin E slows down the aging process, heals scars, and increases sexual response. None of these claims are supported by scientific research. Vitamin E and polyunsaturated fats are present in the same foods. Principle sources include vegetable and seed oils (soybean, cottonseed, corn), shortening, margarine, egg yolk, grains, liver, nuts, and green leafy vegetables, such as lettuce and cabbage.

**Vitamin K.** Vitamin K is needed to make blood clot. This vitamin helps stop bleeding and reduces the likelihood of hemorrhaging. Good dietary sources of vitamin K are dark green vegetables (spinach, kale, cabbage leaves, and peas), cauliflower, tomatoes, wheat bran, soybeans, and soybean oil.



**Vitamin C.** Ascorbic acid, or vitamin C, helps body cells form a "cement" called collagen. Collagen holds body cells together, keeping them in place. It is important in forming and repairing bones and teeth. Vitamin C aids in the healing of wounds by assisting in the formation of strong scar tissue. It speeds the healing of cuts and wounds.

Vitamin C keeps blood vessels strong. Injuries are less likely to cause blood to seep through cell walls and form bruises under the skin. Vitamin C also helps the body resist infection.

The best sources of vitamin C are citrus fruits. Citrus fruits include grapefruits, lemons, limes, oranges, and tangerines. Other fruits like apples, cranberries, peaches, pineapples, and strawberries contain smaller amounts of vitamin C. Some vegetables contain vitamin C, such as broccoli, cabbage, green peppers, greens, potatoes, tomatoes, and turnips.

**Thiamin.** Vitamin $B_1$ is the first of the vitamin B complex. Thiamin is another name for vitamin $B_1$. Thiamin helps the body use carbohydrates for energy. It helps maintain a healthy nervous system and healthy muscles. It promotes a healthy appetite and the digestion of food. Thiamin is found in many foods. Good sources of thiamin include lean meat, liver, eggs, nuts, dried peas and beans, whole-grain and enriched breads and cereals, and green, leafy vegetables.

**Riboflavin.** The second B vitamin, vitamin $B_2$, is called riboflavin. Like thiamin, riboflavin helps the body produce energy from carbohydrates. It works with protein to promote growth in the cells. It helps keep the areas around the mouth, nose, and eyes healthy. It promotes good vision in bright light. And it helps the body resist infection. Milk and milk products, like cheese and ice cream, are good sources of riboflavin. Meat, poultry, fish, organ meats, and eggs are other animal sources of riboflavin. Whole-grain and enriched breads and cereals and green vegetables also make a good contribution.

**Niacin.** Niacin helps the body convert food to energy. It helps maintain a healthy nervous system. It helps keep the skin smooth and helps maintain the skin around the mouth and throat. It also helps keep the gastrointestinal tract healthy. Niacin is vital to the nervous system. Meat, liver, fish, and poultry, as well as milk and eggs, are among the best sources of niacin. Other good sources are nuts, dried peas, beans, and whole-grain and enriched breads and cereals.

**Other B Vitamins.** Several other B vitamins help your body produce energy. These include vitamin $B_6$ (pyridoxine), vitamin $B_{12}$ (cobalamin), folacin (or folic acid), pantothenic acid, biotin, and choline. These vitamins also play other roles in the body. Vitamin $B_{12}$ and folacin are needed to make red blood cells. Deficiencies in these B vitamins can cause anemia. These vitamins are readily available in many food sources.

## Minerals

***Minerals*** are inorganic matter, neither plant nor animal. Minerals found in the earth are drawn from the earth by plants. Minerals in the diet come from plants or from animals that have eaten the plants. The body needs only small amounts of minerals, but their functions are essential. The body needs more calcium, phosphorus, sodium, chloride, potassium, and magnesium than other minerals. The minerals needed in the smallest amounts are called trace minerals. The most important trace minerals are iron, iodine, fluorine, and zinc. Others are copper, sulfur, manganese, and chromium.

**Calcium.** The body contains more calcium than other minerals. Calcium builds, repairs, and maintains the bones, teeth, and fingernails. Calcium helps blood clot and regulates the activities of the heart, muscles, and nerves. It helps the heart muscles contract and relax. It helps other muscles respond to stimuli, such as pain or noise. Calcium is essential for supporting normal growth in children, but it is also needed by adults as well. Osteoporosis, a condition of porous bones, is due to mineral loss from bones. Without sufficient calcium, osteoporosis can develop with increased age. When the supply of calcium in the blood is used up, more must be provided by food. The best sources of calcium are milk and milk products, such as cheese and yogurt. Other sources of calcium are dark green leafy vegetables, such as broccoli and cabbage. Canned fish eaten with the bones, such as sardines and salmon, are another source of calcium.

**Phosphorus.** Calcium and phosphorus work together to build healthy bones and teeth. Phosphorus also helps the body produce energy, and it is necessary for many other body processes. As with calcium, the best sources of phosphorus are milk and milk products. Dairy products supply the proper ratio of calcium to phosphorus. Egg yolks, meat, fish, and poultry are other good sources of phosphorus. So are whole-grain breads and cereals. The proportion of calcium and phosphorus may be thrown off balance by consuming too many soft drinks which have large amounts of phosphorus.

**Sodium, Chloride, and Potassium.** The minerals, sodium, chloride, and potassium work together to control body fluids. Sodium and chloride are found mostly in fluids outside body cells. They help maintain the body's water balance. Potassium is found mostly in fluids inside body cells. Together, body fluids help nutrients pass into cells and waste products to pass out of the cells. These three nutrients also help muscles like the heart contract and relax. Sodium and chloride are found in many foods containing salt. Rich sources of potassium include meats, milk, bananas, leafy green vegetables, and citrus fruits.

**Magnesium.** Magnesium is found throughout the body's tissues and in some body fluids. It must be present for many enzymes to work. Magnesium aids in energy production, helps muscles contract, and helps the body make protein. Good food sources of magnesium include nuts, legumes, cereals, dark green vegetables, seafood, and whole grains.

**Iron.** Iron is found mostly in red blood cells. It is an important part of hemoglobin. Hemoglobin is the substance in the blood which carries oxygen from the lungs to the cells. It also absorbs carbon dioxide from the cells and returns it to the lungs to be exhaled as waste. Iron makes it possible for hemoglobin to carry oxygen. Iron is easily stored in the body in muscles and in all body cells. The body even recycles iron as old blood cells are broken down. The body loses iron when bleeding occurs. Because women lose iron during menstruation, they need more iron in their diets than men do. Also, some iron is lost when both men and women's bodies shed worn out cells.

Liver is the best food source of iron. All meat and poultry provide iron. Egg yolks and green leafy vegetables are also good sources. Some dried fruits, like apricots, raisins, and prunes are good sources but fresh fruit is not. The least expensive sources are enriched and whole-grain breads and cereals and dried legumes. The iron content of foods can be increased by cooking foods in cast iron utensils. Including foods rich in vitamin C at the same meal can enhance the absorption of iron from plant sources.

**Iodine.** The thyroid gland needs a small amount of iodine to produce a hormone called thyroxin. Thyroxin controls the body's metabolic rate. If the body does not get enough iodine, the thyroid gland has to work harder and becomes enlarged. This enlargement is called a goiter. Iodine occurs naturally in areas close to the sea in drinking water, in vegetables grown there, and in seafood, such as fish and shellfish, shrimp, oysters, and crab. In other areas, an adequate source of iodine is iodized salt. Iodized salt is table salt to which a small amount of iodine has been added.

**Fluorine.** Fluorine, or fluoride, is important for building strong teeth. Fluoride helps harden children's soft teeth. This helps prevent tooth decay. Fluoride may also help keep adults' bones strong. In many areas, water naturally contains fluorine. If not, it is often added to the water supply. Some dentists put fluorine on the surface of patients' teeth or recommend using a fluoride toothpaste.

**Effects of Cooking.** Minerals are soluble in water and can easily be lost in cooking. To prevent mineral loss, do not soak vegetables during preparation. Cook vegetables in only a small amount of water and save the cooking water to use in soups, sauces, and gravies.

### Water

***Water*** is important to the body for many reasons. The average person needs six to eight glasses of water each day. Water makes up most of a person's blood, which carries nutrients to the cells of the body. Water aids digestion and absorption of food, regulates body temperature, lubricates moving parts of the body, and aids in the elimination of body wastes.

### Other Substances in Food

There are other substances in food that may affect the body. In plant foods, these substances, or compounds, are called phytochemicals. More than 2000 phytochemicals are found in plants, especially fruits and vegetables. ***Phytochemicals*** are compounds produced by plants that protect them from viruses, bacteria, and fungi. They provide color, flavor, and promote growth and good health. For example, a diet rich in fruits and vegetables is related to a reduced risk of developing certain kinds of cancer, heart disease, and infections. Scientific research continues to unfold the many potential health benefits of phytochemicals. This further supports the recommendations to eat a diet that includes a wide variety of fruits, legumes, vegetables, and whole grains.

◆ ***Essential Questions:*** ◆
***The Essential Nutrients***

1. What are the six essential nutrients needed by the body?
2. What are some food preparation techniques that preserve nutrients in foods?

## NUTRITIONAL NEEDS

Research indicates that all people need the same basic nutrients but in different amounts. Age, sex, environment, body size, level of activity, and nutritional status influence the quantity of nutrients needed by each individual to maintain a strong, healthy body. Ultimately, everyone has control over what they eat. Therefore, people assume the responsibility for the food choices they make.

The ***Recommended Dietary Allowances for Americans (RDA)*** are a set of nutrient standards established for the maintenance of good nutrition. These standards are based on the energy and nutrients needed for good health and that reduce the risk of chronic disease. The RDA serve as a guideline for determining the amounts of nutrients a specific person needs each day. They give the specific recommended daily nutrient needs for a person according to age and gender. The RDA are established by the Food and Nutrition Board of the National Academy of Sciences and are shown in Table 14.1.

Since the establishment of the RDAs, scientific knowledge related to nutrition and health has increased dramatically. This new knowledge includes findings that show the interrelationships of diet, nutrition, and many chronic diseases. Therefore, the Food and Nutrition Board, in partnership with Health Canada, has created ***Dietary Reference Intakes (DRI)*** to refer to three types of reference values used to determine nutritional adequacy. The DRI are shown in Table 14.2. The RDA is one of these three reference values. The other two are known as *Estimated Average Requirement (EAR)* and *Tolerable Upper Intake Level (UL)*. This new information will assist dietitians, physicians, nutritionists, and other professionals in designing dietary plans that work in concert with other health practices in treatment and prevention of chronic disease.

From the mid-sixties until the late 1980s, nutrition information on food labels was based on the *United States Recommended Daily Allowances (USRDA)* which was a version of the RDA using the highest dietary allowances in each age group. Many consumers found the USRDA difficult to understand. In 1990, President George Bush signed the *Nutrition Labeling and Education Act* into law. The Food and Drug Administration (FDA) was then charged with developing new regulations for food labels.

In 1993, the FDA implemented the Daily Values for use on food labels with the intent that all manufacturers would provide the same nutrition information on food labels. The Daily Values replace the USRDA and contain two sets of standards for nutrition labeling: (1) ***Reference Daily Intake (RDI)*** are standards set for protein, vitamins, and minerals; and, (2) ***Daily Reference Values (DRV)*** are the second set of standards and represent food labeling values for food components and nutrients, such as cholesterol, fat, and fiber, that do not have an RDA but are related to nutrition, health, and prevention of disease. The percent Daily Values on *Nutrition Facts* is calculated as the percentage of each *RDI* supplied by a serving of the labeled food. See Figure 14.1 for and explanation of ***Nutrition Facts*** on the food label.

The foodservice worker needs to have knowledge of nutrition principles and be able to apply this knowledge to food selection, preparation, and service. For example, back-of-the-house workers need to know how to store and prepare foods with minimum nutrient loss. Front-of-the-house workers need to maintain the nutritive value of foods during holding and serving. They also need to recognize and understand the social, cultural, and emotional uses of food by foodservice consumers.

### ◆ Essential Questions: ◆
### Nutritional Needs

1. How can the RDA's, RDI's, and the DRV's help in planning a healthy diet?
2. What fact must be included on a "Nutrition Facts" label?

## FOOD AND NUTRITION BOARD, NATIONAL ACADEMY OF SCIENCES–NATIONAL RESEARCH COUNCIL
## RECOMMENDED DIETARY ALLOWANCES,[a] Revised 1989 (Abridged)

*Designed for the maintenance of good nutrition of practically all healthy people in the United States*

| | Age (years) or | Weight[b] | | Height[b] | | Protein | Vitamin A | Vitamin E | Vitamin K | Vitamin C | Iron | Zinc | Iodine | Selenium |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | Condition | (kg) | (lb) | (cm) | (in) | (g) | (µg RE)[c] | (mg α-TE)[d] | (µg) | (mg) | (mg) | (mg) | (µg) | (µg) |
| Infants | 0.0–0.5 | 6 | 13 | 60 | 24 | 13 | 375 | 3 | 5 | 30 | 6 | 5 | 40 | 10 |
| | 0.5–1.0 | 9 | 20 | 71 | 28 | 14 | 375 | 4 | 10 | 35 | 10 | 5 | 50 | 15 |
| Children | 1–3 | 13 | 29 | 90 | 35 | 16 | 400 | 6 | 15 | 40 | 10 | 10 | 70 | 20 |
| | 4–6 | 20 | 44 | 112 | 44 | 24 | 500 | 7 | 20 | 45 | 10 | 10 | 90 | 20 |
| | 7–10 | 28 | 62 | 132 | 52 | 28 | 700 | 7 | 30 | 45 | 10 | 10 | 120 | 30 |
| Males | 11–14 | 45 | 99 | 157 | 62 | 45 | 1,000 | 10 | 45 | 50 | 12 | 15 | 150 | 40 |
| | 15–18 | 66 | 145 | 176 | 69 | 59 | 1,000 | 10 | 65 | 60 | 12 | 15 | 150 | 50 |
| | 19–24 | 72 | 160 | 177 | 70 | 58 | 1,000 | 10 | 70 | 60 | 10 | 15 | 150 | 70 |
| | 25–50 | 79 | 174 | 176 | 70 | 63 | 1,000 | 10 | 80 | 60 | 10 | 15 | 150 | 70 |
| | 51+ | 77 | 170 | 173 | 68 | 63 | 1,000 | 10 | 80 | 60 | 10 | 15 | 150 | 70 |
| Females | 11–14 | 46 | 101 | 157 | 62 | 46 | 800 | 8 | 45 | 50 | 15 | 12 | 150 | 45 |
| | 15–18 | 55 | 120 | 163 | 64 | 44 | 800 | 8 | 55 | 60 | 15 | 12 | 150 | 50 |
| | 19–24 | 58 | 128 | 164 | 65 | 46 | 800 | 8 | 60 | 60 | 15 | 12 | 150 | 55 |
| | 25–50 | 63 | 138 | 163 | 64 | 50 | 800 | 8 | 65 | 60 | 15 | 12 | 150 | 55 |
| | 51+ | 65 | 143 | 160 | 63 | 50 | 800 | 8 | 65 | 60 | 10 | 12 | 150 | 55 |
| Pregnant | | | | | | 60 | 800 | 10 | 65 | 70 | 30 | 15 | 175 | 65 |
| Lactating | 1st 6 months | | | | | 65 | 1,300 | 12 | 65 | 95 | 15 | 19 | 200 | 75 |
| | 2nd 6 months | | | | | 62 | 1,200 | 11 | 65 | 90 | 15 | 16 | 200 | 75 |

NOTE: This table does not include nutrients for which Dietary Reference Intakes have recently been established (see *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride* [1997] and *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin $B_6$, Folate, Vitamin $B_{12}$, Pantothenic Acid, Biotin, and Choline* [1998])

[a] The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined.

[b] Weights and heights of Reference Adults are actual medians for the U.S. population of the designated age, as reported by NHANES II. The median weights and heights of those under 19 years of age were taken from Hamill et al. (1979). The use of these figures does not imply that the height-to-weight ratios are ideal.

[c] Retinol equivalents. 1 retinol equivalent = 1 µg retinol or 6 µg β-carotene.

[d] α-Tocopherol equivalents. 1 mg d-α tocopherol = 1 α-TE.

Reprinted with permission from National Academy Press. Copyright 1998 by the National Academy of Sciences. Courtesy of the National Academy Press, Washington, D.C.

⇨ ***Table 14.1***

BEST COPY AVAILABLE

FOOD AND NUTRITION BOARD, INSTITUTE OF MEDICINE-NATIONAL ACADEMY OF SCIENCES
DIETARY REFERENCE INTAKES: RECOMMENDED INTAKES FOR INDIVIDUALS

| Life-Stage Group | Calcium (mg/d) | Phosphorus (mg/d) | Magnesium (mg/d) | Vitamin D (µg/d)[a,b] | Fluoride (mg/d) | Thiamin (mg/d) | Riboflavin (mg/d) | Niacin (mg/d)[c] | Vitamin $B_6$ (mg/d) | Folate (µg/d)[d] | Vitamin $B_{12}$ (µg/d) | Pantothenic Acid (mg/d) | Biotin (µg/d) | Choline[e] (mg/d) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infants | | | | | | | | | | | | | | |
| 0–6 mo | 210* | 100* | 30* | 5* | 0.01* | 0.2* | 0.3* | 2* | 0.1* | 65* | 0.4* | 1.7* | 5* | 125* |
| 7–12 mo | 270* | 275* | 75* | 5* | 0.5* | 0.3* | 0.4* | 4* | 0.3* | 80* | 0.5* | 1.8* | 6* | 150* |
| Children | | | | | | | | | | | | | | |
| 1–3 yr | 500* | **460** | **80** | 5* | 0.7* | **0.5** | **0.5** | **6** | **0.5** | **150** | **0.9** | 2* | 8* | 200* |
| 4–8 yr | 800* | **500** | **130** | 5* | 1* | **0.6** | **0.6** | **8** | **0.6** | **200** | **1.2** | 3* | 12* | 250* |
| Males | | | | | | | | | | | | | | |
| 9–13 yr | 1,300* | **1,250** | **240** | 5* | 2* | **0.9** | **0.9** | **12** | **1.0** | **300** | **1.8** | 4* | 20* | 375* |
| 14–18 yr | 1,300* | **1,250** | **410** | 5* | 3* | **1.2** | **1.3** | **16** | **1.3** | **400** | **2.4** | 5* | 25* | 550* |
| 19–30 yr | 1,000* | **700** | **400** | 5* | 4* | **1.2** | **1.3** | **16** | **1.3** | **400** | **2.4** | 5* | 30* | 550* |
| 31–50 yr | 1,000* | **700** | **420** | 5* | 4* | **1.2** | **1.3** | **16** | **1.3** | **400** | **2.4** | 5* | 30* | 550* |
| 51–70 yr | 1,200* | **700** | **420** | 10* | 4* | **1.2** | **1.3** | **16** | **1.7** | **400** | **2.4**[f] | 5* | 30* | 550* |
| > 70 yr | 1,200* | **700** | **420** | 15* | 4* | **1.2** | **1.3** | **16** | **1.7** | **400** | **2.4**[f] | 5* | 30* | 550* |
| Females | | | | | | | | | | | | | | |
| 9–13 yr | 1,300* | **1,250** | **240** | 5* | 2* | **0.9** | **0.9** | **12** | **1.0** | **300** | **1.8** | 4* | 20* | 375* |
| 14–18 yr | 1,300* | **1,250** | **360** | 5* | 3* | **1.0** | **1.0** | **14** | **1.2** | **400**[g] | **2.4** | 5* | 25* | 400* |
| 19–30 yr | 1,000* | **700** | **310** | 5* | 3* | **1.1** | **1.1** | **14** | **1.3** | **400**[g] | **2.4** | 5* | 30* | 425* |
| 31–50 yr | 1,000* | **700** | **320** | 5* | 3* | **1.1** | **1.1** | **14** | **1.3** | **400**[g] | **2.4** | 5* | 30* | 425* |
| 51–70 yr | 1,200* | **700** | **320** | 10* | 3* | **1.1** | **1.1** | **14** | **1.5** | **400** | **2.4**[f] | 5* | 30* | 425* |
| > 70 yr | 1,200* | **700** | **320** | 15* | 3* | **1.1** | **1.1** | **14** | **1.5** | **400** | **2.4**[f] | 5* | 30* | 425* |
| Pregnancy | | | | | | | | | | | | | | |
| ≤ 18 yr | 1,300* | **1,250** | **400** | 5* | 3* | **1.4** | **1.4** | **18** | **1.9** | **600**[h] | **2.6** | 6* | 30* | 450* |
| 19–30 yr | 1,000* | **700** | **350** | 5* | 3* | **1.4** | **1.4** | **18** | **1.9** | **600**[h] | **2.6** | 6* | 30* | 450* |
| 31–50 yr | 1,000* | **700** | **360** | 5* | 3* | **1.4** | **1.4** | **18** | **1.9** | **600**[h] | **2.6** | 6* | 30* | 450* |
| Lactation | | | | | | | | | | | | | | |
| ≤ 18 yr | 1,300* | **1,250** | **360** | 5* | 3* | **1.5** | **1.6** | **17** | **2.0** | **500** | **2.8** | 7* | 35* | 550* |
| 19–30 yr | 1,000* | **700** | **310** | 5* | 3* | **1.5** | **1.6** | **17** | **2.0** | **500** | **2.8** | 7* | 35* | 550* |
| 31–50 yr | 1,000* | **700** | **320** | 5* | 3* | **1.5** | **1.6** | **17** | **2.0** | **500** | **2.8** | 7* | 35* | 550* |

NOTE: This table presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). RDAs and AIs may both be used as goals for individual intake. RDAs are set to meet the needs of almost all (97 to 98 percent) individuals in a group. For healthy breastfed infants, the AI is the mean intake. The AI for other life-stage and gender groups is believed to cover needs of all individuals in the group, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

[a] As cholecalciferol. 1 µg cholecalciferol = 40 IU vitamin D.

[b] In the absence of adequate exposure to sunlight.

[c] As niacin equivalents (NE). 1 mg of niacin = 60 mg of tryptophan, 0-6 months = preformed niacin (not NE).

[d] As dietary folate equivalents (DFE). 1 DFE = 1 µg food folate = 0.6 µg of folic acid (from fortified food or supplement) consumed with food = 0.5 µg of synthetic (supplemental) folic acid taken on an empty stomach.

[e] Although AIs have been set for choline, there are few data to assess whether a dietary supply of choline is needed at all stages of the life cycle, and it may be that the choline requirement can be met by endogenous synthesis at some of these stages.

[f] Because 10 to 30 percent of older people may malabsorb food-bound $B_{12}$, it is advisable for those older than 50 years to meet their RDA mainly by consuming foods fortified with $B_{12}$ or a supplement containing $B_{12}$.

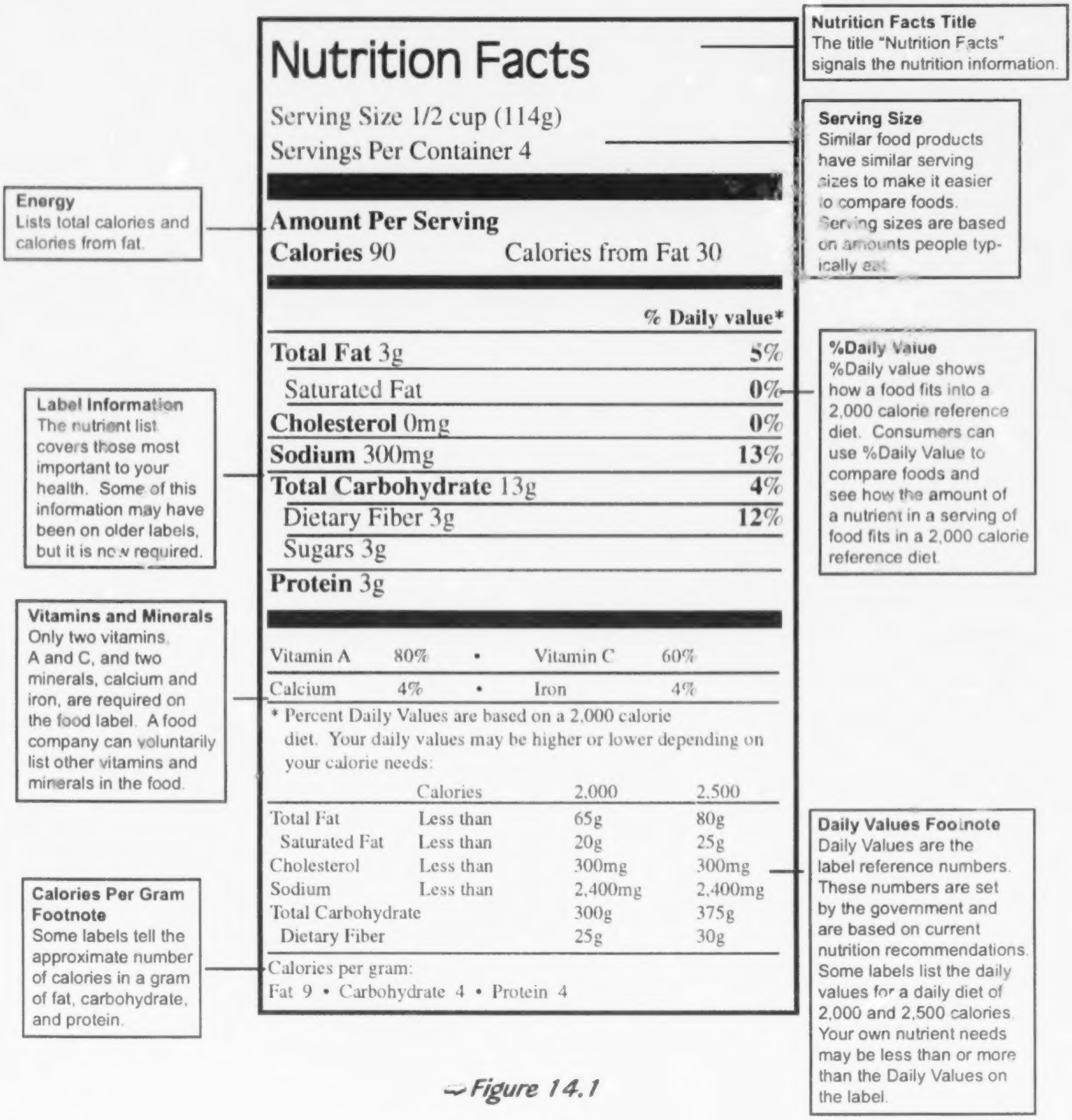
[g] In view of evidence linking folate intake with neural tube defects in the fetus, it is recommended that all women capable of becoming pregnant consume 400 µg of synthetic folic acid from fortified foods and/or supplements in addition to intake of food folate from a varied diet.

[h] It is assumed that women will continue consuming 400 µg of folic acid until their pregnancy is confirmed and they enter prenatal care, which ordinarily occurs after the end of the periconceptional period—the critical time for formation of the neural tube.

Reprinted with permission from National Academy Press. Copyright 1998 by the National Academy of Sciences. Courtesy of the National Academy Press, Washington, D.C.

⇒ *Table 14.2*

BEST COPY AVAILABLE



## Nutrition Facts

Serving Size 1/2 cup (114g)
Servings Per Container 4

**Amount Per Serving**
**Calories** 90 Calories from Fat 30

| | **% Daily value*** |
|---|---|
| **Total Fat** 3g | 5% |
| Saturated Fat | 0% |
| **Cholesterol** 0mg | 0% |
| **Sodium** 300mg | 13% |
| **Total Carbohydrate** 13g | 4% |
| Dietary Fiber 3g | 12% |
| Sugars 3g | |
| **Protein** 3g | |

| | | | | |
|---|---|---|---|---|
| Vitamin A | 80% | • | Vitamin C | 60% |
| Calcium | 4% | • | Iron | 4% |

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

| | Calories | 2,000 | 2,500 |
|---|---|---|---|
| Total Fat | Less than | 65g | 80g |
| Saturated Fat | Less than | 20g | 25g |
| Cholesterol | Less than | 300mg | 300mg |
| Sodium | Less than | 2,400mg | 2,400mg |
| Total Carbohydrate | | 300g | 375g |
| Dietary Fiber | | 25g | 30g |

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

**Nutrition Facts Title**
The title "Nutrition Facts" signals the nutrition information.

**Serving Size**
Similar food products have similar serving sizes to make it easier to compare foods. Serving sizes are based on amounts people typically eat.

**Energy**
Lists total calories and calories from fat.

**%Daily Value**
%Daily value shows how a food fits into a 2,000 calorie reference diet. Consumers can use %Daily Value to compare foods and see how the amount of a nutrient in a serving of food fits in a 2,000 calorie reference diet.

**Label Information**
The nutrient list covers those most important to your health. Some of this information may have been on older labels, but it is now required.

**Vitamins and Minerals**
Only two vitamins, A and C, and two minerals, calcium and iron, are required on the food label. A food company can voluntarily list other vitamins and minerals in the food.

**Calories Per Gram Footnote**
Some labels tell the approximate number of calories in a gram of fat, carbohydrate, and protein.

**Daily Values Footnote**
Daily Values are the label reference numbers. These numbers are set by the government and are based on current nutrition recommendations. Some labels list the daily values for a daily diet of 2,000 and 2,500 calories. Your own nutrient needs may be less than or more than the Daily Values on the label.

*Figure 14.1*

## DIETARY GUIDELINES

All of the foods we eat are categorized into six categories. Together, these categories make up a complete diet. These six categories include:

- Bread, cereal, rice and pasta;
- Vegetables;
- Fruit;
- Milk, yogurt, and cheese;
- Meat, poultry, fish, dry beans and peas, eggs, and nuts
- Fats, oils, and sweets.

The ***Food Guide Pyramid***, shown in Figure 14.2, is a guide for making healthy food choices and thus eating a healthful diet. Table 14.3, *A Pattern for Daily Food Choices*, assists individuals in meal planning and food choices by identifying amounts of foods according to serving sizes.

These five groups supply the nutrients the body needs, as well as all the calories needed for energy. The nutrients these five groups supply are vitamins, minerals, carbohydrates, and proteins.

The sixth food category, Fats, Oils, and Sweets, provides mostly calories and few nutrients. This category's contribution to health is more limited than that of the other groups. Foods in this category are sometimes called ***empty-calorie foods***, which refers to foods that provide calories or energy but little or no nutritive value. These foods add variety and flavor to meals. Used in small amounts, they can add variety without adding too many calories. They should not, however, be substituted for foods from the other five food groups. Refer to Figure 14.2, Food Guide Pyramid, and Table 14.3, A Pattern for Daily Food Choices.

Individuals can personalize the guide to their individual caloric needs. How many calories an individual needs depends on how much energy is used each day. Generally, older people need fewer calories than younger people and women need fewer calories than men because women generally have a smaller proportion of muscle to fat tissue than men. Bridge players, bookkeepers and those with less physical activity need fewer calories than individuals with active lifestyles. Persons who are overweight can cut portions from the sixth category, and then, if needed, cut portion sizes from the other groups. Persons who are underweight can eat larger or additional portions from the first five groups and include some foods from the sixth group.

Research shows that the American diet contributes to some of the chronic diseases that affect Americans in later life. Changing one's diet can reduce the risk of heart disease, some cancers, and strokes. Health objectives to improve nutrition are established in a report, *Healthy People 2000: Objectives for Health Promotion and Disease Prevention*. To help Americans reach this goal, the US Department of Agriculture (USDA) developed dietary guidelines listed in Figure 14.3, ***Dietary Guidelines for Americans***.

The dietary guidelines are suggested for most Americans. They are intended for people who are already healthy. They do not apply to people who need special diets because of diseases or conditions that interfere with normal nutrition. These people may require special dietary instructions from trained dietitians. No guidelines can guarantee health or well-being. Health depends on many things in addition to diet, including heredity, lifestyle, personality traits, mental health, attitudes, and environment. Food alone cannot make you healthy. But good eating habits based on moderation and variety can help keep you healthy and even improve your present health.

# Food Guide Pyramid

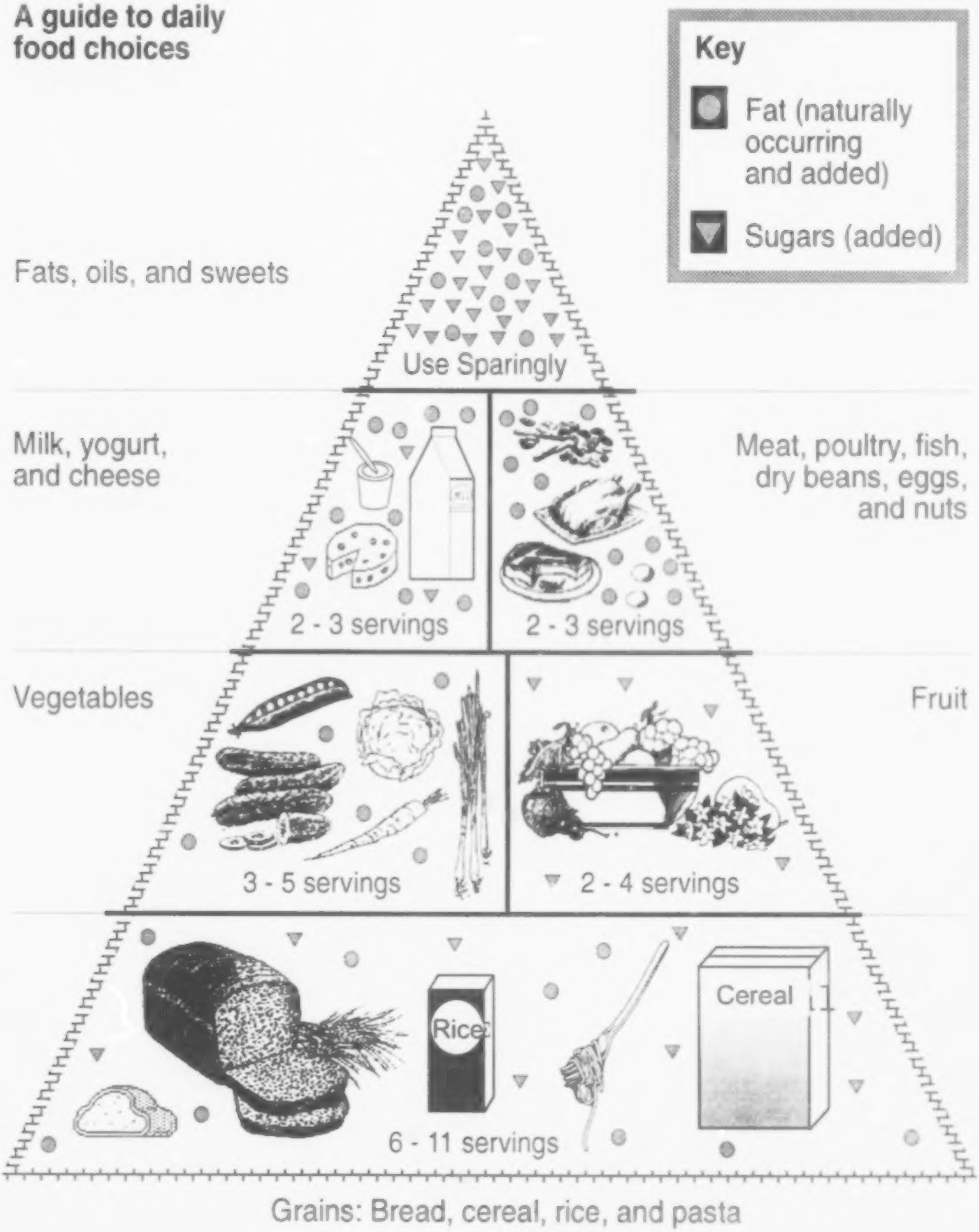

A guide to daily food choices
Key
● Fat (naturally occurring and added)
▼ Sugars (added)
Fats, oils, and sweets
Use Sparingly
Milk, yogurt, and cheese
2 - 3 servings
Meat, poultry, fish, dry beans, eggs, and nuts
2 - 3 servings
Vegetables
3 - 5 servings
Fruit
2 - 4 servings
Rice
Cereal
6 - 11 servings
Grains: Bread, cereal, rice, and pasta

*Figure 14.2*

Adapted from: "The Food Guide Pyramid," Home and Garden Bulletin No. 252, United States Department of Agriculture Human Nutrition Information Service

# A Pattern for Daily Food Choices

| Food Groups | Suggested Daily Servings | What Equals a Serving? |
|---|---|---|
| **Vegetables**<br>• Dark green leafy<br>• Deep yellow<br>• Starchy<br>• Other vegetables | **3 - 5** servings from entire group (include all types regularly; use dark green leafy vegetables and deep yellow vegetables several times a week.) | ♦ 1/2 cup of cooked vegetables<br>♦ 1/2 cup of chopped raw vegetables<br>♦ 1 cup of leafy raw vegetables, such as lettuce or spinach<br>♦ 3/4 cups of vegetable juice |
| **Fruits**<br>• Citrus, melon, berries<br>• Other fruits | **2 - 4** servings from entire group | ♦ a whole fruit, such as a medium apple, banana, or orange<br>♦ a grapefruit half<br>♦ a melon wedge<br>♦ 3/4 cup of juice<br>♦ 1/2 cup of berries<br>♦ 1/2 cup cooked or canned fruit<br>♦ 1/4 cup dried fruit |
| **Breads, Cereals, Rice, and Pasta**<br>• Whole-grain<br>• Enriched | **6 - 11** servings from entire group (include several servings of whole-grain products daily.) | ♦ 1 slice of bread<br>♦ 1/2 hamburger bun, English muffin, or bagel<br>♦ a small roll, biscuit, or muffin<br>♦ 3 to 4 small or 2 large crackers<br>♦ 1/2 cup cooked cereal, rice, or pasta<br>♦ 1 ounce of ready-to-eat breakfast cereal<br>♦ 1 tortilla or pancake |
| **Milk, Yogurt, and Cheese** | **2** servings for adults<br>**3** servings for children<br>**4** servings for ages 11-24<br>(3 servings for women who are pregnant or breast-feeding; 4 servings for teens who are pregnant or breast-feeding) | ♦ 1 cup of milk<br>♦ 8 ounces yogurt<br>♦ 1 1/2 ounces of natural cheese<br>♦ 2 ounces processed cheese |
| **Meat, Poultry, Fish, Dry Beans and Peas, Eggs, Nuts, and Seeds** | **2 - 3** servings from entire group (include dry beans and peas often.) | ♦ 2-3 ounces equal one serving of cooked lean meat, poultry, or fish. Count 1 egg, 1/2 cup cooked dried beans, or 2 T. peanut butter as 1 ounce of meat. |

*Table 14.3*

Adapted from: "Nutrition and Your Health: Dietary Guidelines for Americans," United States Departments of Agriculture and Health and U.S. Department of Human Services, Washington, DC, 1995.

# Dietary Guidelines for Americans

## Aim for Fitness. . .

▲ Aim for a healthy weight.

▲ Be physically active each day.

## Build a Healthy Base. . .

■ Let the Pyramid guide your food choices.

■ Choose a variety of grains daily, especially whole grains.

■ Choose a variety of fruits and vegetables daily.

■ Keep food safe to eat.

## Choose Sensibly. . .

● Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.

● Choose beverages and foods to moderate your intake of sugars.

● Choose and prepare foods with less salt.

● If you drink alcoholic beverages, do so in moderation.

Source: "Dietary Guidelines for Americans," 2000, 5th edition. USDA

⇝ *Figure 14.3*

### ◆ Essential Questions: ◆
### Dietary Guidelines

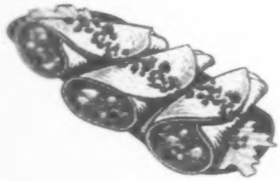
1. What dietary guidelines are available to help individuals develop healthy eating habits? How can they be used by consumers?
2. What are the seven dietary guidelines that have been identified for Americans?

## FACTORS AFFECTING EATING HABITS

A variety of factors affect what people eat. Among the influences on eating habits are cultural patterns, personal preferences, seasonal variation, age, and health.

### Cultural Background

Cultural background often determines food customs and practices. For example, spaghetti and lasagna are foods that are part of the Italian culture. Rice, egg rolls, and soy sauce are part of the Chinese culture. Sausage, sauerkraut, and sauerbratten are associated with the German culture. Beans, tamales, and chili are foods from the Mexican culture.



Eating habits are also affected by religion. ***Kosher foods***, prepared according to strict religious dietary laws, are associated with the Jewish religion. For example, pork must be avoided in the diet. The kinds and amounts of foods eaten by Catholics are limited at certain times by religious practices.

Eating patterns also vary in different regions of the United States. Southerners may eat hominy grits for breakfast and fried chicken, black-eyed peas, and greens for dinner. New Englanders often eat baked beans and brown bread. Many Texans enjoy eggs ranchero, chicken fried steak, mashed potatoes, and gravy.

The diets of persons at different income levels may be influenced by the amount of money available to spend on food. ***Food security*** refers to having complete access to a sufficient supply of safe, nutritious foods. Persons with limited food budgets are likely to eat a more limited variety of foods than persons with more to spend on food.

### Personal Preferences

Children often develop food preferences early in life. These may be patterned after a parent or older sibling. Food preferences may be influenced by the way foods are prepared. Some people become accustomed to eating certain foods and may be hesitant to try new foods or foods prepared in unfamiliar ways. For example, many adults feel that milk is a food for babies and children, and some people believe that eating raw vegetables is harmful. Our eating habits are formed by beliefs that may not be nutritionally sound.

### Seasons and Traditions

The weather often affects people's appetites. Hot weather may create a desire for light meals of cold foods. Cold weather may cause people to want hearty meals of hot foods. In addition, people tend to associate certain foods with certain times of year. People often think of ice cream in the summer, pumpkin pie for Halloween, and roast turkey and cranberries for Thanksgiving and Christmas.

## Age

Dietary needs vary according to age. Young children often have small appetites. They may prefer finger foods and avoid strong flavored foods. Milk is an important part of children's diets. The elementary age child needs more food than the younger child. This is a good time to encourage a child to try new and different foods. Adolescence, occurring between the ages of thirteen and twenty, is a period of rapid growth and maturation. The formation of muscles, bone, and blood requires ample supplies of the building materials protein, calcium, and iron. Because of an increase in activity and a rise in basal metabolism, adolescents consume more food. The teenage girl needs more iron-rich foods than a teenage boy. Adolescents consume more fast foods, such as hot dogs, hamburgers, French fries, and milkshakes than persons in other age groups. As growth ends and maturity is reached, the need for building materials declines, as does basal metabolism. Compared with adolescents, an adult has a lower need for protein and calcium. Like teenage girls, a woman needs more iron-rich foods than a man.

The major nutritional problem of adults is weight control. As a general rule, a person should maintain his or her ideal weight at age twenty-five throughout adulthood. As people add years, they need to subtract calories. This means avoiding pastries, rich cakes, gravies, nuts, candies, sugar, soft drinks, and fried foods. As aging occurs, basal metabolism and activities slow down, resulting in a decreased energy need. The average man or woman aged 55-75 needs 300 to 400 fewer calories per day than those needed during the 35-55 year period. Older persons need smaller amounts of the B-complex vitamins. Many elderly people require special diets for various health conditions.

Eating patterns and appetite levels often change as people grow older. Adults may prefer eating at a seated restaurant to eating at a fast-food establishment. Many older adults enjoy the variety of foods available at low cost at a cafeteria. Older adults who live alone are likely to have a poor diet. The senses of smell and taste are changed with aging, so food may be less appetizing to the older adult. Some frail older adults must be coaxed and encouraged to get them to eat.

## Health

Food preferences and nutritional needs are affected by health and by medications. Loss or impairment of teeth makes it difficult to chew. Problems may develop in adjusting to false teeth. A person who has had a stroke and is partially paralyzed may have impaired muscle ability. For example, a stroke victim with little or no feeling in one side of the face may have little control and no taste on that side of the mouth. A similar sensation results from a deadening of the mouth for dental work.

For various reasons in any stage of life, a person may need a modified diet, which basically means a change in the diet. A modified diet changes the normal diet to meet the body's requirements under special conditions. This procedure may be referred to as medical nutrition therapy. A special diet may be needed by persons who are suffering from nausea or vomiting, who have serious infections, who have disorders of the digestive system, who are too weak to make an effort to chew, or who are recovering from surgery. A special diet may be needed by persons who are diabetic, who need to lose weight, who have liver, gall bladder, or certain cardiovascular diseases, or who have edema related to heart conditions, toxemia during pregnancy, or other swelling conditions caused by sodium remaining in the body.

### Activity Level

A person's activities also affect eating. The more physically active a person is, the more calories are needed to meet the body's energy needs. The less physically active a person is, the fewer calories are needed by the body. If a person consumes more calories than the body needs for energy, weight gain occurs. If a person consumes as many calories as the body needs for energy, weight is maintained. If a person consumes fewer calories than the body needs for energy, the body must burn its own fat or protein to make up the difference and weight is lost.

### ◆ Essential Questions: ◆
**Factors Affecting Eating Habits**

1. What factors affect eating habits? Explain.
2. Why must some individuals modify their diets as they grow older?

## MEAL PATTERNS

The meals eaten, the types and amounts of foods eaten at each meal, and the time of day when meals are consumed vary in the United States. Attitudes toward between-meal snacks also vary.

### Breakfast

The term breakfast means "break the fast." Because breakfast is the first meal in over twelve hours for most people, it should meet certain nutritional requirements. Breakfast should supply one-fourth to one-third of the day's nutrients and should include a variety of foods from the Daily Food Guide. It should provide a source of vitamin C to replenish the body's supply. It should provide a high-quality protein. It should offer a quick source of energy. It should satisfy until lunch. Unfortunately, breakfast does not appeal to everyone. Some people say that they do not feel hungry in the morning, and others say they do not have time to eat.

The traditional breakfast in this country includes fruits and juices; cereals with cream or milk; eggs; meats, such as bacon, ham, sausage, and steak; breads, such as pancakes, waffles, French toast, hot breads, and rolls; and beverages. In some areas hashed brown potatoes, grits, and refried beans are also served. Breakfast tacos and burritos also are popular breakfast foods in some parts of the country. Non-traditional food combinations, such as pizza and an orange, can also meet the nutritional requirements of breakfast.

Breakfasts vary from very light to heavy. A very light continental breakfast may include juice, rolls, and beverages. A light breakfast might include fruit or juice, cereal or egg with toast, and a beverage. A medium-size breakfast might include fruit or juice, egg with bacon or sausage, toast, and a beverage. A heavy breakfast might include fruit or juice, cereal, egg with breakfast meat, toast, and a beverage. Fresh strawberries, melon, or other seasonal foods may be offered as specials.

Pancakes, waffles, or French toast may be the main course for a light breakfast. The meat is usually grilled. A choice of toast, sweet rolls, muffins, or biscuits may be offered.

### Lunch

Like breakfast, lunch should include a variety of foods from the Daily Food Guide. It should supply at least one-third of daily nutritional needs. In the United States, lunch is usually a light meal served at midday. If the heaviest meal is eaten at midday, it may be called dinner. Working people, shoppers, and travelers often need quick service at lunch. Others may prefer a more leisurely lunch.

Lunch menus vary from light to very heavy. A light lunch might include a sandwich or salad and a beverage. A medium lunch might consist of a soup or salad and a sandwich with a beverage. A heavy lunch might include two dishes plus a dessert and a beverage. A very heavy lunch might include a main dish, a vegetable, a salad, bread, dessert, and a beverage. Sometimes foods associated with both breakfast and lunch are presented at a mid-morning meal called brunch.

## Dinner

Traditionally, dinner is the heaviest meal of the day. A light dinner may be called supper. Dinner should provide one-third or more of daily nutritional needs. A good dinner offers at least one serving from the meat group, two servings from the fruit and vegetable group, and one serving from the bread group. For children, a serving from the milk group should be included. Dinners should be nutritious and balanced in flavor, texture, temperature, color, and form. Using a variety of methods of preparation make dinner menus more appealing.

Like lunches, dinners vary from light to very heavy. A light dinner might include a main dish containing protein, two vegetables, bread, and a beverage. A medium dinner might include a main dish, two vegetables, a salad, bread, dessert, and a beverage. A heavy dinner might begin with an appetizer followed by the main dish, two vegetables, salad, bread, dessert, and a beverage. A very heavy dinner might consist of an appetizer, then soup, followed by the main dish, two vegetables, salad, bread, dessert, and a beverage.

## Snacks

Foods eaten between meals are called snacks. Snacks are usually quick foods like potato chips or French fries, a hamburger, a milk shake, a soft drink, or an ice cream cone. Snacks are often high in calories and low in nutrition. If wisely selected, snacks can fill the gaps in the day's intake of nutritious foods. Nutritious snacks include items, such as cheese, fruit, peanut butter and nuts.

### ◆ Essential Questions: ◆
### Meal Patterns

1. How do meal patterns affect the foodservice operation?
2. How do meal patterns in the United States vary?

## Chapter Highlights

- Food meets physical, social, and emotional needs.
- Food provides fuel and building materials for the body. The energy value of food is expressed in calories. Protein, carbohydrates, and fats all produce energy. Minerals and vitamins do not produce energy but are important for regulation of body processes maintenance, and growth.
- The body needs water to aid in digesting and absorbing of food, regulating body temperature, lubricating moving parts of the body, and aiding in the elimination of body wastes.
- Protein is made up of amino acids, nine of which cannot be manufactured in the body, but must be supplied by food.
- Carbohydrate is the body's main source of energy. The three types of carbohydrates are sugar, starch, and cellulose. Sugars may be either monosaccharides or disaccharides. Starch is the most complex form of carbohydrate. Cellulose, or fiber, does not supply energy to the body, but provides bulk to aid in digestion and aids in the elimination of body wastes.
- Since sugars dissolve in water, the water used to cook fruits and vegetables should be saved for use in soups, sauces, and gravies.
- Fat is a concentrated source of energy made up of fatty acids and glycerol. Essential fatty acids must be obtained from food. Fat may be saturated, unsaturated, or polyunsaturated.
- Cholesterol is a lipid found in foods high in animal fat. Persons whose blood contains high levels of cholesterol may have a higher risk of heart disease than other people.
- Fat cooked at a high temperature has a disagreeable taste and may be more difficult to digest.
- Vitamins regulate body processes and prevent specific diseases. The fat-soluble vitamins, A, D, E, and K, can be stored in the body. The water-soluble vitamins, C and the B-complex vitamins must be replenished every day because they are not stored in the body.
- Water-soluble vitamins are easily lost during the storage and preparation of food, but fat-soluble vitamins are not.

## Chapter Highlights, cont'd.

- Minerals have essential functions in the body. Those needed in the greatest amounts include calcium, phosphorus, sodium, chloride, potassium, and magnesium. The trace minerals are needed in very small amounts. The most important trace minerals are iron, iodine, fluorine, and zinc.

- The Food Guide Pyramid is made up of the following six categories: vegetables; fruit; bread, cereal, rice and pasta; milk, yogurt, and cheese; meat, poultry, fish, dry beans, eggs, and nuts; and fats, oils, and sweets. Eating the recommended number of servings of foods in the first five groups should meet the body's nutritional needs; the sixth category adds variety and flavor to meals, but supplies mostly empty calories.

- Current dietary goals for Americans include the following: eat a variety of foods; balance the food you eat with physical activity; choose a diet with plenty of grain products, vegetables, and fruits; choose a diet moderate in sugars, salt, and sodium; and avoid alcoholic beverages.

- Factors which affect people's eating habits include cultural background, personal preferences, seasons traditions, age, health, and activities.

- The RDA, Recommended Dietary Allowances for Americans, serves as a guideline for determining the amounts of nutrients a specific person needs each day.

- Meal patterns vary in terms of meals eaten, the types and amounts of food eaten at each meal, and the time of day when meals are consumed. In the United States, the typical pattern includes breakfast, a light lunch at midday, and a heavier dinner in the evening, plus snacks.

# Chapter 15

## Meeting Special Needs

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

2B Evaluate considerations and accommodations for employees and customers with special needs.
7G Use appropriate terminology related to the food production and service industry.
9A Utilize effective planning strategies for food production operations.
9G Apply nutrition principles in planning, preparation, and presentation for food production operations.
9H Describe food preparation strategies for meeting special dietary requirements.

### Chapter Vocabulary

- ambulatory
- bland diet
- calorie-controlled diet
- calorie-restricted diet
- cycle menus
- diabetic diet
- fat-restricted diet
- general diet
- liquid diet
- medical nutrition therapy
- selective menu
- sodium-restricted diet
- soft diet
- spoken menu
- supplementary feedings
- therapeutic diet

Foodservice workers need an understanding of special diets. In commercial foodservice establishments, workers must answer questions from customers about preparation methods and about the ingredients used. They may be asked to suggest menu items that fit the customer's dietary needs. Occasionally, customers request that a dish be prepared especially to meet their dietary needs. Some restaurants and cafeterias offer low-calorie or other special items to meet customer's needs. But, in general, commercial foodservice establishments make major diet and menu changes only in response to massive consumer demand. Salad bars, restricted salt usage in cooking, posted calorie information, and sometimes nutrition and exercise information are examples of changes that have occurred because of massive consumer demand.

## INSTITUTIONAL FOODSERVICE

Institutional foodservice operations plan menus to meet the needs of the persons served. Child care facilities plan meals which appeal to young children and meet their special nutritional needs. School foodservice programs plan menus to meet the nutritional needs of elementary and secondary school children for breakfast and lunch. Hospitals plan a variety of diets to meet the needs of patients with various health problems. Long-term care facilities and homes for frail older adults plan meals that appeal to older persons who may have a variety of special needs.

### Cycle Menus

***Cycle menus*** are a set of carefully planned menus. They offer different items each day and can cover a period of one week to six weeks. When the period is completed, the cycle is repeated again. Because the availability of food varies with the seasons, a different set of cycle menus may be developed for winter, spring, summer, and fall. In health care facilities, cycle menus for the most frequently prescribed modified diets may be developed to accompany regular menus. The beginning employee should understand how a cycle menu works and why it is used in some foodservice establishments.

Cycle menus save time in menu planning. Once they are set up, they can be used over and over with minor changes to allow for any unexpected development. Before using each menu of the cycle, the menu should be reviewed to determine whether any changes are needed. It is possible that a food selected for a certain day may not be available and a substitution will need to be made or a change in menus may be necessary when a holiday occurs. As the menus are used, a record should be kept of their acceptance, the recipes, the amounts of food prepared and left over, and other useful information. This information aids in perfecting the menus in each cycle. Refer to Table 15.1 for an example of two days of a cycle menu.

**3-Week Cycle Menu**
**Week 1 Summer**

| Monday | Tuesday |
|---|---|
| Orange Juice | Apple Juice |
| Banana | Cantaloupe |
| Cream of Wheat | Oatmeal |
| Corn Flakes | Puffed Rice |
| Poached Eggs | Hot Cakes / Blueberry Syr |
| Ham Steak | Bacon Strips |
| Buttered White Toast | English Muffin |
| Cinnamon Roll | Maple Bar |
| Assorted Jam & Jelly | Assorted Jam & Jelly |
| Coffee-Tea-Milk | Coffee-Tea |

*Table 15.1*

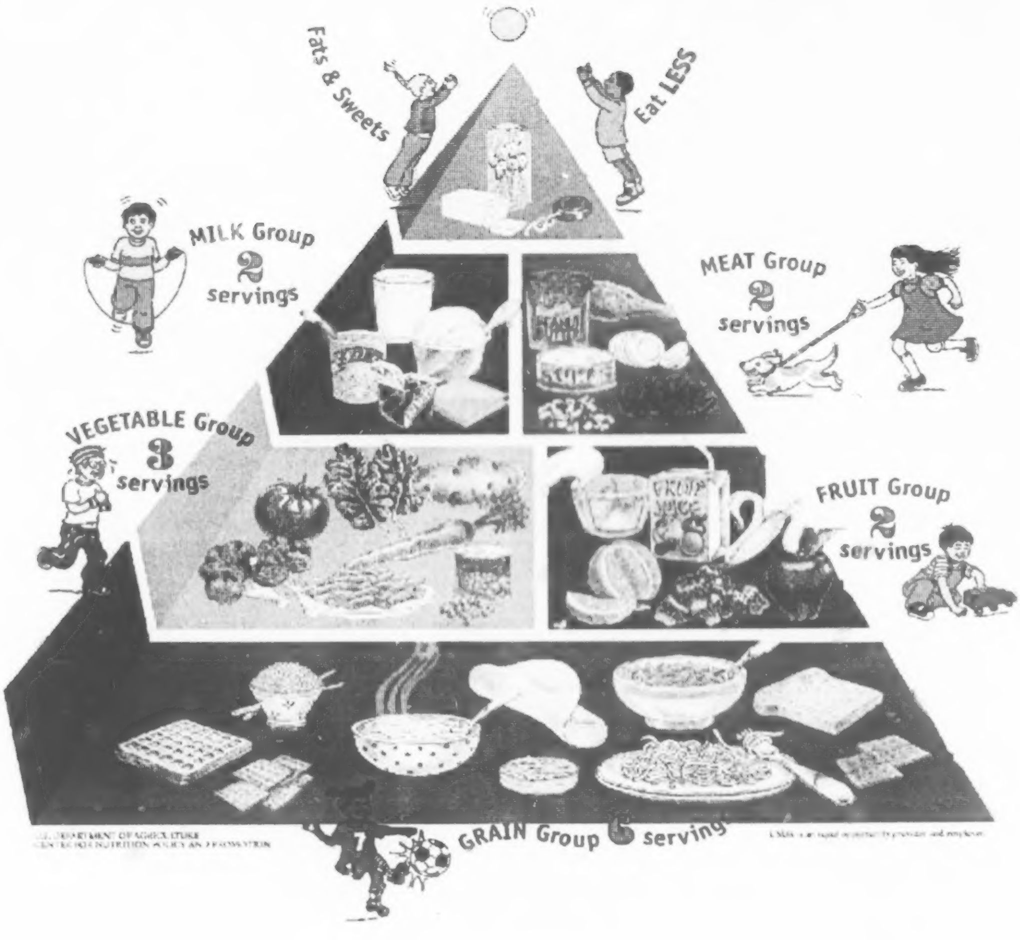
### Planning Meals for Young Children

Several factors influence the meal and snack requirements of young children in child care facilities. Children's nutritional needs are the most important consideration. State licensing standards for child care centers contain foodservice and nutrition guidelines that must be followed. These guidelines determine how foods are handled, served, and stored. Regulations also specify the kinds and amounts of foods to be served. The Food Guide Pyramid for Young Children is shown in Table 15.2.

For example, Texas minimum standards require that food served to a child cared for

# Food Guide Pyramid For Young Children

A Daily Guide
for
2- 6- Year Olds


Fats & Sweets
Eat LESS
MILK Group
2
servings
MEAT Group
2
servings
VEGETABLE Group
3
servings
FRUIT Group
2
servings
U.S. DEPARTMENT OF AGRICULTURE
CENTER FOR NUTRITION POLICY AND PROMOTION
GRAIN Group 6 servings

Source: USDA Center for Nutrition Policy and Promotion.

*Table 15.2*

from four to seven hours a day meet at least one-third of the child's daily food needs. Children in care for more than seven hours must be offered one-half of their daily food needs. All children must have regular meals and morning and afternoon snacks. If a child care center receives funding from an outside source, the guidelines of the funding agency also must be followed.

Young children often have special food likes and dislikes. Children usually like colorful, attractively arranged foods. They like foods that can be held, like orange slices, peeled apple slices, and seedless grapes. They like meat cut in little pieces. They do not like bitter or sharp tastes. Children like crunchy foods like carrots and crackers.

They like foods which are neither too hot nor too cold. Most children do not like gummy foods. They do not like vegetables with strings in them, like celery. Children generally do not like foods mixed together in one dish with the notable exception of pizza and spaghetti.

Childhood is a good time to introduce a wide variety of foods because children are curious and enjoy new experiences. The more foods a person likes, the more likely that one's nutritional needs will be met. A child care center's menus should reflect the cultures of the children in the center. Effective menu planning will involve knowledge of the foods and food preparation methods of the various cultures represented. For this reason, it is a good idea to involve parents in the menu planning. Serving a familiar cultural dish supports children's self-concepts and encourages positive feelings about individual differences.

The menus of the child care center may be prepared by an individual, such as the center director or a nutritionist. A menu planning committee might include the center director, a nutritionist, the cook, a caregiver, and a parent. Each of these individuals contribute unique and important information to the menu planning process. The group can meet about four times a year to prepare cycle menus.

## School Menus

The major goal of all school foodservice programs is to serve attractive, nutritious, and low-priced meals. Menu planning plays a very important role in the operation of a school cafeteria program. Lunch and breakfast menus, if offered, must meet the federal government's School Lunch Pattern and School Breakfast Pattern requirements which are used as guides for planning nutritionally-balanced meals for children. The School Lunch Pattern provides a framework to meet approximately one-third of the student's dietary needs over a period of time. The regulations state that the school lunch and breakfast patterns should consist of a minimum of the food components in the amounts indicated in Table 15.3.

Proper nutrition is the main concern in the planning, preparation, and service of meals in the school cafeteria. When planning nutritious meals for school foodservice, the food groups listed in the Daily Food Guide are a very important aid. The foods listed in the school lunch and breakfast pattern follow the Daily Food Guide.

Meals must be acceptable to the students. The quality, appearance, and appeal of the food affects its acceptance. Including familiar

**Minimum Requirements for School Menu Patterns**

| Breakfast | Lunch |
|---|---|
| 1/2 pt. fluid milk as a beverage<br>2 oz. edible portion of lean meat, poultry, or fish, 2 oz. cheese, 1 egg, 1/2 cup cooked dry beans or dry peas, 4 Tbsp. of peanut butter or an equivalent quantity of any combination of the foods listed above<br>3/4 cup serving of 2 or more vegetables or fruits<br>1 slice of whole grain or enriched bread or an equivalent serving of biscuits, muffins, rolls, or 1/2 cup whole grain or enriched rice, pasta, or other cereal grains | 1/2 pt. of fluid whole milk<br>1/2 cup of fruit or fruit or vegetable juice<br>1 slice of whole grain or enriched bread or an equivalent serving of biscuits, muffins, rolls, or 3/4 cup serving of enriched whole grain, or fortified cereal<br>2 oz. edible portion of lean meat, poultry, or fish, 2 oz. cheese, 1 egg, 1/2 cup cooked dry beans or dry peas, 4 Tbsp. of peanut butter or an equivalent of any combination of the foods listed above |

*Table 15.3*

foods and foods with contrasting colors, textures, flavors, sizes, and shapes increases the meal's appeal.

## *Foodservice in Health Care facilities*

The patient or resident is the most important person in any health care facility. A patient is a person who is hospitalized or who is confined to a room in a long-term care facility. A resident is a person in a long-term care facility who is **ambulatory**, able to walk, and can leave his or her room to eat in the dining room. To provide proper care for the patient or resident in a health care institution, the dietary personnel should understand the effect of illness or aging on dietary needs.

Patients and residents in hospitals and long-term care facilities may react differently to food than they would in other circumstances. Food has many meanings. It does more than satisfy one's physical needs, it also helps to meet one's social needs. Foodservice in long-term care facility dining rooms provides opportunities for contact with other people and a chance to socialize. Food and understanding go together, especially for older people and those who are ill.

The residents or patients in a long-term care facility have many adjustments to make. It may take them some time to adjust to living in a new environment. In addition to the change in environment, a resident or patient may have a chronic illness, which is one that lasts a long time or recurs often. Persons with chronic illnesses may be discouraged or depressed. This attitude is often reflected in their feelings toward eating and may result in loss of appetite. Patient food response should be reported to a supervisor.

In other instances, residents may be lonely and feel that they are out of touch with family and friends. They are now in a situation where they are dependent on others to do things that they were once able to do for themselves. The residents or patients may feel that no one really cares for them and that they no longer count. These emotional reactions may affect the eating habits of residents in one of two ways. They may either lose interest in food and not eat enough, or they may eat too much. In an institutional environment, there may be a difference in the eating behavior of persons who are able to eat in a dining room and those who must receive meals in their rooms. The following are several advantages in providing dining room service for ambulatory residents:

- Eating with others helps improve the appetites of residents.
- Residents get exercise coming to the dining area, which helps formerly bedfast patients to regain their strength.
- The morale and sociability of residents is improved.
- Residents show an increased interest in their personal appearance.

### ◆ Essential Questions: ◆ Institutional Foodservice

1. What is a cycle menu? How does it work?
2. Why do foodservice workers need to understand how cycle menus work?
3. What factors influence the meal and snack requirements of young children in child care facilities?
4. What is the major nutritional goal of a school foodservice program?
5. Why might patients in hospitals react differently to food than they would under other circumstances?
6. What are the advantages of providing "dining room" service for ambulatory residents of long-term care facilities?

## MEDICAL NUTRITION THERAPY

***Medical nutrition therapy*** is the procedure of changing normal diets to meet the body's requirements under special conditions. These special conditions deal primarily with the aging process and various illnesses. Assessing the patient's needs for modified diets is part of medical nutrition therapy. The diet may be used to treat a specific disease such as diabetes, mellitus, or may supplement medical or surgical care.

It is the responsibility of the dietitian to plan therapeutic diets. The beginning employee should have a thorough understanding of the various diets which are prepared in most hospitals and homes for the sick and frail older adults.

Employees in any type of facility which provides specialized diets for its residents or patients should be aware of the extreme importance of following prescribed diets strictly. If a person is given food which is not on his or her diet, very serious problems in the health of the individual could result or even involve the employee or facility in a serious lawsuit.

The ***general diet***, sometimes referred to as a regular diet, is based on a normal, adequate diet and includes recommended amounts of foods from the food groups in the Daily Food Guide. Most of the patients in a hospital are on the regular diet. A patient may be placed on a therapeutic diet for a short time due to special conditions, such as recent surgery. Many patients are then returned to the regular diet before leaving the hospital. A long-term care facility also provides a regular diet for its residents, but if therapeutic diets are required by certain residents, such as diabetics, special diets are served to these residents on a regular basis.

Most hospitals offer a ***selective menu*** for their patients. The patients may choose the foods they prefer from those offered. Refer to

**Example of A Selective Menu**

***Hospital Breakfast Menu***

This is the breakfast menu for tomorrow morning. Please circle your preferences. Choose one food from each group.

| *Juices/Fruits* | *Entrées* | *Breads* | *Extra* |
|---|---|---|---|
| Orange Juice<br>Apricot Nectar<br>Stewed Prunes<br>Apple Juice<br>Grape Juice<br>Sliced Peaches | Scrambled Eggs<br>Dry Cereal<br>Scrambled Whites<br>Soft-Cooked Egg<br>Hard-Cooked Egg<br>Oatmeal | White Toast<br>Wheat Toast<br>Biscuit<br>Muffin | Coffee<br>Tea<br>Milk<br>Margarine<br>Jam or Jelly |

⇨ *Table 15.4*

Table 15.4 for an example of a selective menu. Having a choice in food is very important to patients. They are much more likely to eat food they have chosen. A diet is successful only if the food is eaten. Some hospitals offer selective menus to patients on the therapeutic diets as well as those on a regular diet. Hospital menus may be printed or spoken by an employee responsible for helping patients with their menu selection. This type of menu is referred to as a ***spoken menu***.

Most health care facilities provide their employees with a diet manual that lists all of the modified diets available. Some of the more commonly used therapeutic diets are as follows:

- ***bland diet***
- ***diabetic diet***
- ***calorie-restricted diet***
- ***calorie-controlled diet***
- ***fat-restricted diet***
- ***liquid diet***
- ***soft diet***
- ***sodium-restricted diet*** (salt-restricted)

Descriptions of these diets, their uses, and examples of foods allowed are given in Table 15.5. Any additional types of therapeutic diets will be listed in the dietary foodservices diet manual at the hospital.

## Therapeutic Diets

A ***therapeutic diet*** is a modified diet used as part of the treatment to improve a patient's health. When doctors feel that certain changes should be made in a patient's diet, they give orders in exactly the way that they would order medicines or any other treatment. The modification is then made by the dietitian. Although most hospitals have standard diets for specific conditions, it is important to understand that each patient is considered individually.

A diet can result in weight change; it can be designed to allow certain body organs to rest; it can be made up of foods which can be digested by an improperly functioning digestive track; or it can be designed to overcome specific nutritional inadequacies. At one time, changes in normal diets were thought of as withholding certain foods. However, in many instances a modified diet adds foods to a normal diet. Therefore, emphasis should be

## Therapeutic Diets

| *Diet* | *Description* | *Uses* | *Examples of Foods Allowed* |
|---|---|---|---|
| Liquid | Less irritating than solid food; fed six or more times during hours patient is awake. | Acutely ill patient; patient who has difficulty chewing or swallowing. | Depends on whether clear-liquid or full-liquid diet is prescribed. |
| Clear-liquid | Consists of liquids which are clear in color. Supplies very few nutrients but does give the body necessary fluids. Usually given for only one or two days. | Used when patient cannot eat food or when there is nausea or vomiting. | Gelatin, broths, tea, some carbonated beverages, apple juice. |
| Full-liquid | All-liquid diet which meets all the nutritional needs of patient. Can be used longer length of time than clear-liquid diet. Cream may be added to milk and milk drinks to increase caloric value and to help reduce hunger pangs. Corn syrup or lactose (milk sugar) can be used to add calories. | Follows clear-liquid diet as patient improves. | Milk, eggnog, citrus and other juices, broth, coffee, tea, carbonated beverages, gelatin, sherbet (no pulp), cereal gruel, strained vegetable juices. |
| Soft | Nutritionally adequate diet consisting of soft-textured foods or foods which have been changed or strained and are easily digested. Raw fruits and vegetables are not permitted. Tough meats should be avoided. Coffee and tea are usually limited. | Generally follows the liquid diet. Used for patients with serious infection, patients recovering from surgery, one having a disorder of the digestive system, or one who is too weak to make an effort to chew. | Milk, soft eggs (not fried), tender or chopped meats (not fried or highly seasoned), potatoes, and selected cooked vegetables, some cooked and canned fruits, toasted white bread, crackers, cooked cereals (no hot breads). |
| Bland | Diet compound of mild-flavored foods which are not especially sweet, sour, sharp, bitter, or strong. Foods with coarse fibers should be avoided, as well as fried foods and strong flavored vegetables, such as onions, dried beans, cabbage, and cauliflower. Caffeinated beverages should be limited or omitted because of their stimulating effects. | Sometimes given after full-liquid diets or for patients with internal open lesions that are in the process of healing. | Applesauce, ripe bananas, creamed soups, vanilla ice cream, sugar cookies, cooked pears, cottage cheese, plain gelatins, plain cake, plain custards and puddings, milk, macaroni, potatoes, soft eggs, rice, bread, cereal products such as farina and cream of wheat, and baked or broiled meats, fish, and poultry. |
| Diabetic | Modified normal diet specifying exact amounts of protein, fat, and carbohydrate needed by patient. | Used to restrict amounts and types of certain foods to help control diabetes. Also used in weight reduction diets and for diets of some cardiovascular (heart) patients. | Uses exchange list composed of six food groups. Foods in each group have comparable food values. One food may be substituted for another in the same group. Examples: An exchange for 1 slice of bread is 1/2 c. cooked cereal or 1/2 c. mashed ptoatoes. Those recommended by American Diabetes and American Dietetic Association. |
| Calorie-restricted | Limited calorie content, but nutritionally adequate. | Used for weight reduction. | Often utilizes exchange system. |
| Calorie-controlled | Adjusts calorie intake to maintain weight loss. | Used to maintain weight without gaining or losing. | Utilizes exchange list. |
| Fat-restricted | Nutritionally-adequate but may be low in calories due to fat restriction. May be supplemented by additional amounts of protein and carbohydrate. May cause loss of appetite. | Used for patients with liver, gall bladder, and certain cardiovascular diseases. | Foods low in fat. Those recommended by the American Heart Association. |
| Sodium-restricted | Nutritionally-adequate diet with limited amounts of salt and foods high in sodium content. May result in loss of appetite. | Used when there is edema (sodium retention) related to heart conditions, toxemia of pregnancy, and other swelling conditions. | Avoid bacon, ham, corned beef, olives, sauerkraut, sausage, potato chips, salty crackers, pretzels, saltwater fish, and shellfish. |

***Table 15.5***

placed on allowed foods, rather than a long list of foods to avoid. Sometimes medications affect the appetite or cause food-drug interactions.

Patients accept a therapeutic diet more readily if they are given some explanation of its meaning. Some hospitals place an explanation card on the patient's tray. The card may say that the doctor has requested the diet modification and that the dietitian will call on them if they have any questions about the diet. It should be emphasized that the diet is an important part of the patient's treatment. However, explanation of the diet is the doctor's responsibility, not the employee who serves it.

## Nourishments and Supplemental Feedings

Patients may need extra nourishment in addition to regular meals as part of their treatment. To meet the patient's needs, the physician may order milk drinks, fruit juice, ginger ale, or special beverages. These beverages may or may not be accompanied by a wafer or cracker. Extra beverages and foods during the day or evening are called nourishments.

Supplies for supplementary feedings are usually ordered for each floor by a nursing supervisor. The orders are received and processed through the dietary department. Dietary personnel may be responsible for delivering the supplies to the floor. Patients suffering from malnutrition or health problems, such as ulcers, may need special feedings. The physician may order items such as milk or cream, eggnog, ice cream, or tube feedings as a diet supplement to the patient's regular meal schedule. Dietary personnel prepare these supplements according to the dietitian's orders. Special feedings that are part of the patient's diet therapy are called ***supplementary feedings***.

Ensure™ is an example of a nourishment given either orally or by tube to sick patients. It is high in calories, protein, vitamins, and minerals; it is bland and non irritating. It is essential that instructions be followed specifically and strict sanitary measures be taken.

Tube feedings are used for the patient with a functioning gastrointestinal tract who cannot be adequately nourished by oral intake. Many types of formulas are available. Specific formulas are ordered by the physician.

### ◆ Essential Questions: ◆
### Medical Nutrition Therapy

1. What are the eight most common types of therapeutic diets? Describe.
2. How are supplementary feedings used in diet therapy?

## Chapter Highlights

- Cycle menus are a carefully planned set of menus covering a three- to six-week period, which are repeated over and over during the period or season for which they were planned.
- State licensing standards for child care centers include guidelines regarding foodservice and nutrition that must be followed.
- Meals for young children should reflect their food likes and dislikes, introduce a wide variety of foods, and consider the food preferences of the cultures represented.
- School foodservice menus should provide attractive, nutritious, low-priced meals that meet the federal government's School Lunch Pattern and School Breakfast Pattern requirements. The School Lunch Pattern provides a framework to meet approximately one third of the student's dietary needs over a period of time.
- Diet therapy is the procedure of changing normal diets to meet the body's requirements under special conditions, usually aging or illness.
- A general or regular diet is based on a normal, adequate diet and includes recommended amounts of foods from the food groups in the Daily Food Guide. Most of the patients in a hospital are on the regular diet.
- Orders for a therapeutic diet are given by the patient's doctor. The modification is then made by the dietitian.
- A diet manual provides information about the therapeutic diets used by a particular institution.
- The most common therapeutic diets include liquid, soft, bland, diabetic, calorie-restricted, calorie-controlled, fat-restricted, and sodium-restricted.
- Supplementary feedings are special feedings that are part of the patient's diet therapy. These may be prescribed for patients suffering from malnutrition or health problems, such as ulcers.

# Chapter 16

## Food Production Equipment

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.
9D Demonstrate appropriate use, care, and maintenance of tools, utensils, and equipment utilized in food production.
9J Perform appropriate tasks in food production according to industry standards.
9K Apply available technology in food production.
10D Select equipment and utensils appropriate for prescribed tasks.

### Chapter Vocabulary

- baker's scale
- balance scale
- broiler
- convection oven
- convection steamer
- conveyor toaster
- dough hook
- espresso coffee machine
- exhaust hood
- flat beater
- food cutter or chopper
- food processor
- food slicer
- gauge
- impingement oven
- infrared oven
- microwave oven
- pastry blade
- pizza oven
- portion scale
- pumice brick
- reconstitution oven
- regular or general purpose oven
- revolving or carousel oven
- spindle blender
- spring-type scale
- stack oven
- steamer
- wire whip

A variety of equipment is used in food preparation. Equipment is needed for weighing ingredients, opening cans, cutting foods, mixing foods, making and dispensing beverages, and cooking food. The equipment used will depend on the type and volume of foodservice. For example, fast-food establishments may have specialized equipment designed for preparing and serving menu items quickly and efficiently.

## USE AND CARE OF FOOD PREPARATION EQUIPMENT

### Scales

Scales and balances are used in quantity food preparation to save time and assure accuracy. Because ingredients are not all the same weight, it is not always correct to say that 2 cups of an ingredient equals 1 pound. When the amounts in a recipe are expressed in ounces or pounds, it is important that ingredients be weighed instead of measured.

Several acceptable types or models of scales and balances are used in foodservice such as the following:

- spring-type model
- balance scale
- portion scale
- baker's scale

Refer to Table 16.1 for illustrations of the following scales.

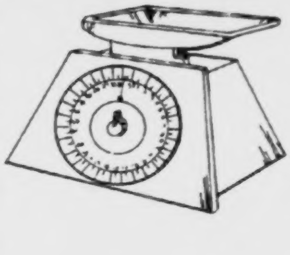
**Spring-type Scale.** The ***spring-type scale*** is used for weighing dry ingredients, such as beans, macaroni, rice, cheese, fruits, and vegetables. To operate the spring-type scale, the product to be weighed should be placed on the platform. The rotating dial needle indicates the weight of the product. The dial on the front of the scale is graduated from ounces to pounds. A floor model spring-type scale is often used in the receiving room to weigh incoming food and supplies. A similar model might be used in the kitchen to weigh large amounts of food, such as dry beans. For convenience, the floor model platform scale is usually on wheels.

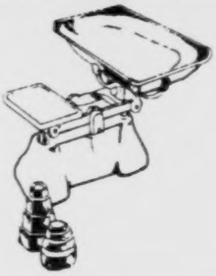
**Balance Scale.** The gravity-activated type, called the ***balance scale***, is used for weighing batters and mixes. To operate the balance scale, all weights should be removed from the right-hand platter. The scale pan from the left-hand platter should be removed. The weight indicator should be placed into the zero notch. Platters should come to rest in a position level and opposite to each other. When scales are in a balanced position, touching either platter should cause both platters to move in an up-and-down motion before coming to rest again in the balanced position. One should select weights appropriate for the measurement and place them on the right-hand platter. The weight indicator should be placed in the proper notch. Placing the weight on the scales will cause the right-hand platter to swing downward and rest on the frame of the scales. The food item should be placed on the left-hand platter in an amount just sufficient to bring scales into a balance position. The item to be measured can be added in relatively large amounts until the scales begin to swing into a balanced position. Smaller amounts should be added until the exact balanced position is accomplished.

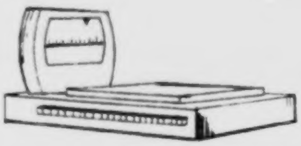
**Portion Scale.** The ***portion scale*** is used for weighing portions of food and rolls. To operate the portion scale, the weight indicator should be placed in the groove along the scaled beam for the desired portion size. The product should be placed on the scaled tray. The weight arrow should be checked to see if the portion needs to be increased or decreased.

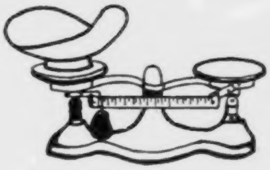
**Baker's Scale.** The ***baker's scale*** is used for weighing ingredients or for scaling dough. For instance, dough for a loaf of bread is weighed for uniform-sized loaves. To operate the baker's scale, the weight indicator should be placed at zero on the scaled brass beam, which indicates ounces up to one pound. The scoop should be centered on the left-hand platform. Weights are used to balance the two platforms. The scoop is balanced by placing the proper weight on the right-hand platform. The weight indicator should be moved on the brass beam to the right until the desired weight is found. The ingredients to be weighed are placed in the scoop on the left-hand platform. If necessary, a portion of the ingredients should be added or removed

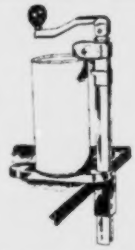
## Food Preparation Equipment: Scales, Can Openers, and Cutting Equipment

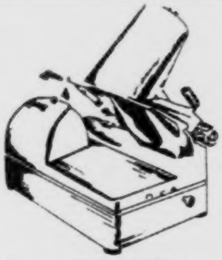

Spring-type Scale

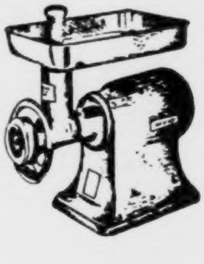

Balance Scale

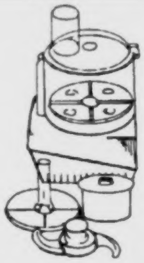

Portion Scale

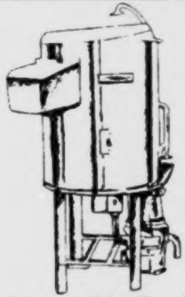

Baker's Scale

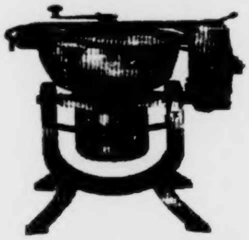

Bench-type Can Opener


Food Slicer


Food Cutter or Chopper


Food Processor


Vegetable Peeler


Floor model cutter mixer
(Source: Hobart Corporation)

⇨ *Table 16.1*

to make the platforms balance. When the weighing procedure has been completed, the ingredients or food items being weighed should be removed and the scales returned to a balanced position.

Scales and other equipment used for weighing must be kept clean. This may be done by wiping the scale with a damp cloth after weighing each ingredient. At the end of the day, weighing equipment should be checked to see that ingredients have not accumulated on it. The scale should be washed with detergent water and a clean cloth. The scales should be air dried.

## Can Openers

The commercial can opener or cutter is designed to remove lids from cans ranging from small through institutional sizes. When properly used, the can opener can save time and energy. Refer to Table 16.1 for an illustration of a bench-type can opener.

**Bench-type Can Opener.** Prior to opening a can of food, the top should be wiped with a damp cloth. To operate the bench-type manual can opener, the handle should be lifted to a vertical position until the cutting blade is about one inch above the can. The can should be placed on the base and with a quick downward motion, the blade is forced into the top near the edge. The handle should be lowered to a horizontal position. To open the can, the handle should be turned clockwise until the blade cuts out the lid. The lid should be removed before it falls into the can. The handle should be raised to a vertical position.

The shank should be lowered into the base of the can opener. The blade of the can opener should be wiped with a damp cloth after each operation. Food deposits that remain on a can opener not only cause bacterial contamination, off-flavors, and odors in food but also may interfere with the operation of the can opener.

The opener should be cleaned daily. To clean, the opener should be removed by lifting the shank out of the base. The shank should be washed in a hot detergent solution and scrubbed with a brush. The shank should be rinsed under hot running water and dried. The blade should be washed with a sanitizing solution and inspected for nicks and grooves that may cause metal shavings to drop into food. Following manufacturer's instructions, old or badly worn blades should be replaced with new ones. The can opener should be kept in good repair so that it cuts sharply and leaves no ragged edges. The base should be wiped off with a hot damp cloth. Careful attention should be given to the edge of the base.

For monthly cleaning of the can opener, the blade should be cleaned and inspected following the instructions for daily cleaning. The screws and the base should be removed. The blade should be scrubbed using a hot detergent solution, rinsed, and then dried. The table under the can opener should be cleaned by scrubbing with a hot detergent solution, using a scraper if necessary. The table should be rinsed and dried. A very thin film of rust preventive, such as cooking oil, should be applied to the shank and bottom of base. To reassemble the can opener, the base should be screwed back in place and the shank replaced.

**Electric Can Opener.** Many foodservice operators now use electric can openers. They operate on the same principle as manual can openers. To operate the electric can opener, the can is placed against the opener with the protruding edge of the can on the cutting wheel. Pushing the start button or lever will start the motor, puncture the can, and rotate the can against the cutter.

The can opener blades should always be wiped clean with a damp, sudsy cloth. Most cutter wheel assemblies may be removed for cleaning but the manufacturer's directions should be checked first.

## Cutting Equipment

The cutting equipment used in food preparation includes the food slicer, the vertical food cutter or chopper, the food processor, and the vegetable peeler. When using cutting equipment, foodservice employees should know and follow safety precautions. Refer to Table 16.1 for illustrations of the following cutting equipment.

**Food Slicer.** The ***food slicer*** is used for slicing boneless meats and cheese. Fruits, vegetables, and bread may also be sliced by the food slicer. The food slicer can be used for cutting hot or cold foods.

The first step to using the food slicer is to plug it in. The blade control indicator for the desired thickness of slice should be adjusted. The food should be placed in the food carriage. The food needs to be firmly held in place using the food holder. The switch is turned on and using the handle, the carriage is moved back and forth across the blade using a rhythmic motion.

The following safety precautions should be observed when using the food slicer:

- Always make certain the switch is off and the plug is pulled out of the socket before cleaning the slicer.
- Read and follow the manufacturer's instructions carefully.
- Never use the slicer when the blade guard is off.
- Always keep hands away from the blade when the machine is in operation.
- Leave the food slicer unplugged when not in use.
- Never use a metal instrument to scrape food particles from the slicer knife. A nicked blade tears food.
- Do not use very hot water or steam when cleaning the slicer. Too much heat may dry lubricants in important parts.
- Keep blades sharpened according to manufacturer's instructions.
- Do not use vegetable oil. Check the operator's manual for the correct type of oil for lubrication.
- The motorized part of the unit should not be submerged in a sink or dishwasher.
- Do not use bleach to clean aluminum parts. Strong detergents cause aluminum to corrode.

The food slicer should be cleaned daily with a sanitizing solution. Before cleaning, the electrical cord should be removed from the socket, the blade control indicator should be set at zero, and parts should be removed following manufacturer's instructions. The gauge plate should be wiped with hot detergent solution, then rinsed and dried. *Employees should keep clear of the blade edge.* The entire blade should be wiped with a heavy cloth that has been folded and dampened with hot detergent solution. The cloth should be wrapped around the long-handled hook, if provided. The slicer should be wiped from the center toward the edges of the blade. The blade should then be rinsed and dried with a clean, heavy cloth. The blade guard should be washed in hot detergent solution, rinsed, and dried. *The blade guard should be replaced immediately to prevent injury.* Other parts should be washed in hot detergent solution, rinsed, and dried. All surfaces should be washed with hot detergent solution. Under blades should be cleaned with a damp cloth. The cloth should be pushed under the blade, using the long-handled hook, if provided. This should be rinsed and dried. The area under the slicer should be cleaned. Parts should be replaced following the manufacturer's instructions. After cleaning, the slicer should be covered with plastic or a clean towel.

**Food Cutter or Chopper.** The ***food cutter*** or ***chopper*** is used for chopping ingredients for dishes in which the ingredient's appearance in the finished product is not important. Before using a vertical food cutter or chopper, the manufacturer's instructions should be read and followed carefully. The machine should be completely assembled with all parts securely in place. To use, the machine should be turned on, then food should be fed into the bowl gradually. Before the food is removed, the machine should be turned off and the user should wait for the knives to stop rotating. When the knives stop rotating, the safety catch should be thrown and the food removed from the exposed part of the bowl. Then, the guard should be raised and the remaining food removed.

To prepare the food cutter or chopper for the next operation, the knives should be secured to prevent rotation and the blades should be wiped cautiously. The bowl should be wiped out. The knife guard should be rinsed, dried, and replaced. The cutter or chopper should be reassembled according to the manufacturer's instructions.

The food cutter or chopper should be cleaned daily following the manufacturer's directions carefully. The guard, bowl, and any other removable parts should be washed in a hot detergent solution, rinsed and dried. All parts, bowl, and guard should be replaced.

The following are safety precautions to be taken when using the food cutter or chopper:
- Never put hands in the bowl while cutter is in use.
- Wait until the knives have stopped revolving before removing food or cleaning.
- Use a bowl scraper rather than hands to feed food into cutters; move the bowl scraper in the direction opposite to bowl rotation.
- Do not use cutter for cutting meat with bones or gristle in order to prevent damage to knives and gears.
- After cleaning the cutter, make sure knives are replaced in proper position.

**Food Processor.** A ***food processor*** accomplishes the task of a food cutter or chopper in addition to other tasks usually done with equipment, such as knives, graters, and mixers. The operation and cleaning of the food processor is similar to that of the food cutter or chopper. The directions of the manufacturer should always be followed.

When operating the food processor, one needs to remember that the blades are sharp. To avoid injury, a cutting blade or disc should never be placed on the base without first having the bowl in place. Hands and utensils should be kept away from the moving blades. The food pusher should be used, never hands, to feed food when shredding or slicing. The processor should always be operated with the cover in place. When finished, the processor should be turned off, and the blades should come to a halt before opening. The processor should be unplugged before taking off or putting on parts, before cleaning, or while not in use. The base should never be immersed in water. All other parts should be washed in hot detergent solution. Only attachments recommended by the manufacturer should be used.

**Vegetable Peeler.** Vegetable peelers remove the skin from potatoes and other vegetables. They work by rotating the vegetables against an abrasive surface. Some of the larger units are plumbed with cold tap water. The vegetable peeler should be cleaned daily with a sanitizing solution. Vegetable peelers are not as common as they were in the past. Many establishments now purchase peeled, sliced, shredded, or semi-prepared vegetables.

**Other Cutting Equipment.** Various other types of cutting equipment are used in foodservice. Among these are speciality cutters and shredders for salad making and hand or power saws for cutting meat carcasses.

## Mixing Equipment

Mixers and blenders are used for mixing foods during their preparation. Food processors are also used for some mixing tasks. Refer to Table 16.2 for illustrations of mixing equipment.

**Mixer.** Mixers may be either floor models, bench models, or table models. The 30-60 quart floor model mixer is used for mixing and blending ingredients or for incorporating air into the product. The 12-20 quart bench model and the 5 quart table model are used for mixing, creaming, or beating ingredients for cakes, batters, doughs, pastries, or meringues.

Mixers use a variety of beaters and whips, which are the agitators used in mixing. Each is used for specific purposes. A ***flat beater*** is used for general mixing. It is never used for heavy doughs. A ***wire whip*** is used for incorporating air into light mixtures, never for heavy mixtures. A ***dough hook*** is used for mixing heavy doughs requiring a folding and stretching action. A ***pastry blade*** is used for combining shortening and flour by a cutting action, as for biscuits, pie crust, or shortcake.

To operate a mixer, one should select the appropriate bowl size and place it on the bowl support. The bowl should be filled 1/2 to 2/3 full. The proper beater or whip should be selected and inserted into the beater shaft. The beater or whip should be locked into position. The bowl should be raised to the desired height using the lever. The speed control can be adjusted to low, or placed in neutral according to the manufacturer's instructions. For gear-driven machines, the clutch lever should always be put into neutral before changing speeds. The user should select the desired speed and mix the required length of time. When mixing is complete the machine should be turned off. The bowl should be lowered, the beater or whip removed, then the bowl removed.

To clean the food mixer, the manufacturer's directions should be followed carefully. Immediately after use, the bowl support, beater shaft, shell, and base should be cleaned with hot detergent solution, rinsed, and then dried. The groove on the beater shaft, if necessary, should be scraped and brushed out. The bowl and beaters should be washed immediately after use. Cold water should be used to rinse before washing if egg or flour batters have been mixed. The beater should be rinsed, dried, and hung up. The bowl should be rinsed and dried thoroughly.

Attachments used with the mixer include the vegetable chopper and the meat and food chopper. The vegetable chopper is a special attachment for slicing, grating, or shredding vegetables and cheese. The food is placed by a rotor inside the chopper and forced through a plate which cuts the food. The plates used with the vegetable chopper include the slicer plate, the grater plate, and the shredder plate.

The meat and food chopper is used for chopping raw or cooked meat, vegetables, and dried fruits. It is used for grinding dry bread crumbs, grating hard cheese, and chopping hard-cooked eggs. A pusher is used to push the food through the chopper.

The following safety precautions should be observed when using the mixer:

- Select the correct bowl for the type and amount of mixture and then select the correct beater or whip according to bowl size and mixture.
- Be sure to fasten the bowl and beaters, agitators, or whip securely before starting the motor.
- Prevent spillage by starting the machine at low speed.
- Do not put hands, spoons, or scrapers into bowl while mixer is in operation.
- Always use a rubber scraper or flexible spatula to scrape the sides of the bowl and to remove food from the beater or whip.

- Scrape the sides of the bowl *only* after the agitator has stopped.
- Remove agitators and attachments *only* after the motor has stopped.
- Use a splash cover if bowls are over half full.
- Get help when handling heavy containers or using wheeled equipment.
- Do not wear loose clothing or accessories that may catch on the moving parts of the machine.
- Keep long hair tied back so it cannot become caught in the moving parts of the machine.

**Blender.** Blenders are used for high-speed blending, pulping, or mixing of meat, fish, vegetables, fruits, or beverages. To operate a blender, the jar should be secured onto the base. Substances to be blended should be placed into the jar. The lid on the jar should be secured. The cord should be connected, the switch turned on, and the desired speed selected. The switch should be turned off as soon as the ingredients reach the desired consistency.

To clean the blender, the jar should be removed from the base, washed, rinsed, and dried. For hard-to-remove materials, detergent water should be put into the jar and blended briefly before washing. The base should be wiped with a damp cloth after each use, then dried.

The following are safety precautions to be observed when using the blender:

- Do not drop spoons, spatulas, or scrapers into machine while motor is on.
- Be sure lid is fastened tightly.
- Do not put very coarse foods or large pieces of ice into jar.
- Disconnect cord when machine is not in use.

## Beverage Equipment

Beverage equipment includes equipment for making and serving coffee, tea, and cold beverages. As with all food preparation equipment, beverage equipment should be kept clean and sanitary. Refer to Table 16.2 for illustrations of beverage equipment.

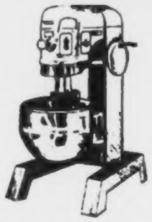
**Coffee-brewing Equipment.** Coffee-brewing equipment is used for making and serving coffee. Coffee can be brewed in an urn or in an automatic drip coffee maker. An ***Espresso coffee machine*** is a special machine that creates the water pressure, temperature, and steam to make a strong flavorful coffee.

An urn is a container with a faucet. The most popular electric urn is fully automatic. It is connected to a source of hot water. A filter basket fits in the top. The coffee is pre-measured and poured into the filter basket. A button is pushed to start the coffee brewing. The hot water drops through the coffee in the basket. When the coffee is brewed, the urn automatically shuts off. Different brands of urns vary and may have capacities of up to 80 gallons.

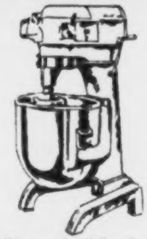
An automatic drip coffee maker works much like an urn. Hot water passes through the coffee and filter in the brewing basket. The brewed coffee drips into the serving decanter, which is the glass container the coffee is served from. When the decanter is full, the water automatically shuts off. To make good coffee, coffee makers must be kept clean. Grounds should be emptied from the basket as soon as the coffee is made. All surfaces should be washed daily with a brush and rinsed thoroughly.

**Tea Dispensers.** An instant dispenser may be used for iced tea. The iced tea dispenser combines powdered tea with water. Some dispensers use cold water, others freshly boiled water. Sometimes tea is made

## Food Preparation Equipment: Mixing Equipment and Beverage Equipment



Floor Model Mixer



Bench Model

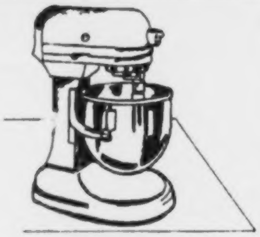
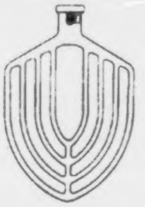
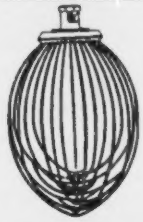


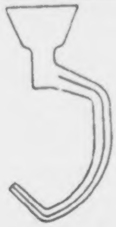
Table Model



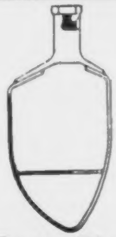
Flat Beater



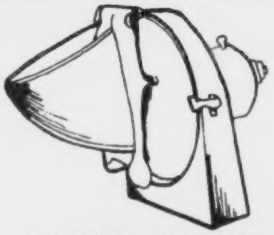
Wire Whip



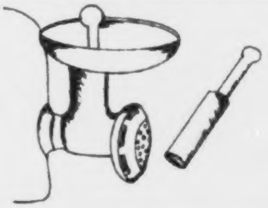
Dough Hook



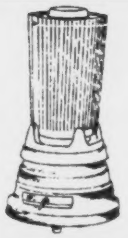
Pastry Blade



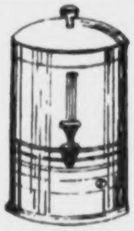
Vegetable Chopper



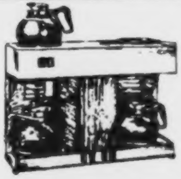
Meat and Food Chopper



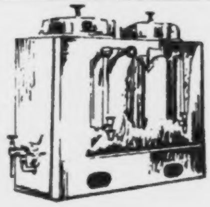
Blender



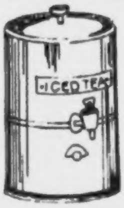
Electric Urn



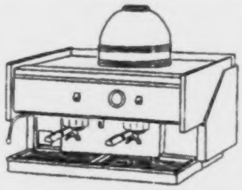
Decanter Type Automatic Drip Coffee Maker



Twin Urn



Tea Urn



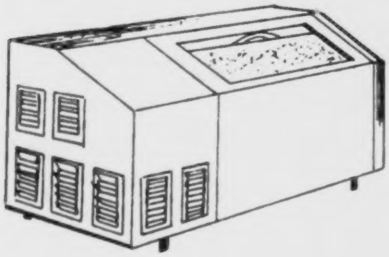
Expresso Machine

⇨ *Table 16.2*

in a large container called a tea urn. Like coffee makers, equipment used for making and serving tea must be thoroughly cleaned every day.

**Cold Beverage Dispensing Machines.** Automatic beverage dispensers are used for milk, soft ice cream, syrups and toppings, fruit juices, and soft drinks. ***Spindle blenders*** are used to make milkshakes. Dispensers used for dairy products must be cleaned daily to prevent bacterial growth. The counter and work area around dispensers must be kept clean and sanitary at all times. Spills should be wiped up immediately.

**Ice-Making Machines.** Ice-making machines may make cubed, flaked, or chipped ice. Some machines automatically dispense ice into a container. In others, the ice is shredded into a bin and must be removed with a scoop. When not in use the scoop used to remove ice should be stored in a sanitary manner. The ice bin lid should be kept closed. A glass or glass container should never be placed into the ice bin because it could break or chip in the ice.



The exterior of the ice-making machine should be cleaned daily with a damp cloth, then dried and polished with a soft cloth. The ice maker should be defrosted periodically according to the manufacturer's instructions. Special chemical solutions for cleaning ice machines can be pumped through the ice machine to remove mineral deposits. The inside should then be wiped with a cleaning solution, rinsed, and then air-dried.

◆ ***Essential Questions:*** ◆

***Use and Care of Food Preparation Equipment***

1. What type of scales are used in foodservice? How is each used?
2. How are the different types of beverage dispensers cleaned and sanitized?
3. What safety precautions are important when using foodservice equipment?

## USE AND CARE OF COOKING EQUIPMENT

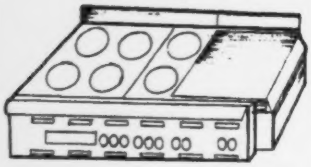
Surface cooking equipment includes the range top, the grill, the broiler, the deep-fat fryer, and the exhaust hood. Other types of cooking equipment include steaming equipment, baking and roasting equipment, and toasters. Refer to Table 16.3 for illustrations of cooking equipment.

### *Range Top*

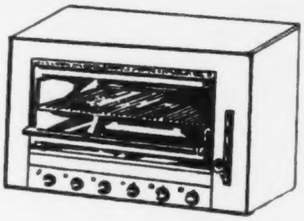
The range top is used for surface cooking. It is used for browning meats, cooking in small amounts of fat, boiling, or cooking in a double boiler. It also may be used for steaming, frying, and braising if more specialized equipment is not available. It may be gas or electric. It may have individual burners or a solid cook top. The number and sizes of burners vary. The burners usually are equipped with thermostats that control the temperature. Many range tops have an oven underneath.

When using the range top, it is important for the user to select the burner size or flame

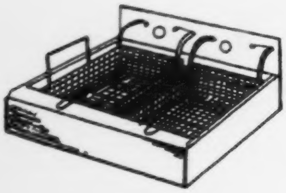
## Food Preparation Equipment Used in Cooking



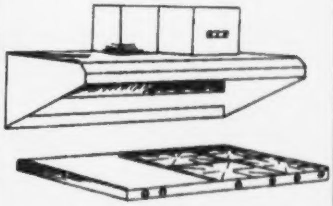
Griddle



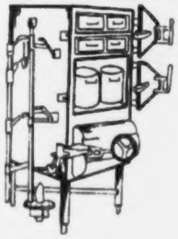
Broiler



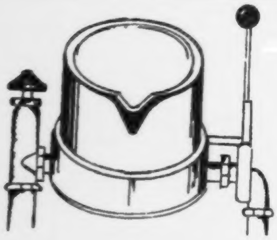
Deep Fat Fryer



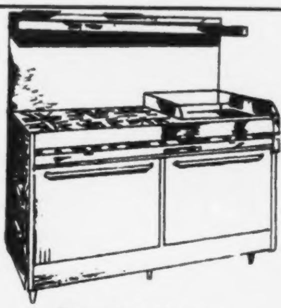
Exhaust Hood



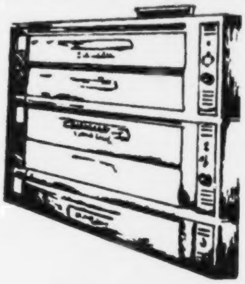
Compartment Steamers



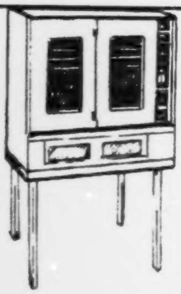
Steam Jacketed Kettle



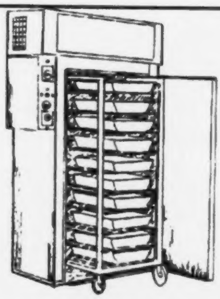
Regular Oven



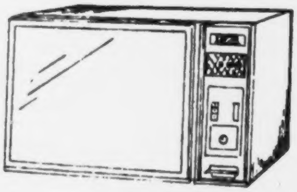
Stack Oven



Convection Oven



Reconstitution Oven



Microwave Oven

⇨ *Table 16.3*

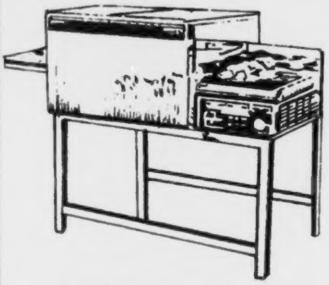
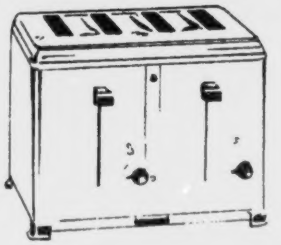
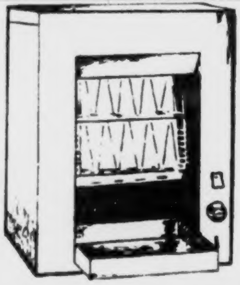
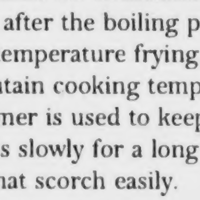
| Food Preparation Equipment Used in Cooking | | |
|---|---|---|
| <br>Impingement Oven | <br>Individual Toaster | <br>Conveyor Toaster |

***Table 16.3 - continued***

to fit the size of the pot or pan used. It is also important that the right amount of heat for the job is selected. High heat is used for quickly starting the cooking process. Medium high heat is used for maintaining the cooking temperature after the boiling point is reached and for low-temperature frying. Low heat is used to maintain cooking temperatures below boiling. Simmer is used to keep foods warm, to cook foods slowly for a long time, or to melt foods that scorch easily.

For efficient and sanitary operation, spills should be wiped up immediately. The range top should be cleaned daily after it cools. Burned on food should be removed with a wire brush or scraper. The top, units, sides, and base should be wiped with hot water and a detergent solution, then rinsed and dried. Thorough removal of grease from cracks and drip trays helps prevent fire hazards. Weekly care includes soaking burners or grates in hot detergent solution, rinsing, and drying.



## Griddle

A grill, or griddle, is a flat piece of metal with burners underneath. The heat is controlled by a thermostat. It may be either gas or electric. A ventilator draws off smoke and odors quickly. Fat usually drains off at the sides and collects in a drip cup which must be cleaned frequently. Grills are used for breakfast foods like eggs, bacon, sausage, pancakes, and French toast. They are also used for foods like steaks, hamburgers, frankfurters, sandwiches, and potatoes.

Grills, or griddles, should have a splashback or raised back to keep grease from splattering. They should also have grease troughs and rounded corners for easy cleaning.

The surface of the grill is seasoned with unsalted oil, then heated to form a slick surface. It is never washed. To clean the grill, allow it to cool, then scrape the surface with a spatula, or a stiff metal scraper. Remove stick food with a ***pumice brick*** which is made of soft volcanic rock. Then wipe with a grease mop and polish with a soft cloth. Filters in the hood above a grill should be washed or changed frequently. The wall back of a grill, usually made of fire brick, should also be washed frequently with a hot detergent solution.

## Broiler

A **broiler** applies heat directly to food. It is used to prepare meat, fish, and other main dishes. It operates at a higher temperature than a grill. The heat may be applied from underneath, from the top, or from both sides at once. The heat source may be electricity, gas, charcoal, or heated volcanic rock. Temperature control is achieved by raising or lowering the grid. The intense heat sears and browns the outside of the meat while retaining the juices in the meat.

Broilers must be kept very clean to prevent fire hazards. All traces of grease should be removed and drain cans should be emptied daily. Burned on areas can affect the flavors of foods.

## Deep-Fat Fryer

Deep-fat fryers are used for frying foods by immersing them in hot deep fat. Cooking a food in deep fat is similar to boiling it. The food is surrounded by the hot, bubbling fat. Menu items that have been fried in deep fat are often called French fried.

Fryers vary in size and may be portable or floor mounted. They may be heated by gas or electricity. A thermostat controls the temperature of the fat to be heated. Most fryers have automatic timers.

Fryers are used for cooking potatoes, batter-cooked meat, poultry, fish, and vegetables, and for fried desserts. For foods cooked in a wire basket, the basket is filled and lowered into the hot fat or oil. Baskets should not be filled more than half full. Foods like chicken, doughnuts, and fried pastries are placed directly in the grease rather than in a basket. Turning is not necessary unless the food floats. Foods like chicken, fried steak, and fish should be turned. When the food is done, it should be lifted out and allowed to drain to remove excess fat.

Fryers and the surrounding area must be kept extremely clean to prevent fires. Before cleaning the deep-fat fryer, the unit should be turned off and the warm fat strained through the filter. The unit should be cleaned and dried according to manufacturer's directions before refilling with oil or shortening. The taste of food cooked in the deep-fat fryer is affected by how clean and fresh the fat is. The fat must be filtered regularly and changed periodically. Fat that is not properly cared for becomes rancid.

## Exhaust Hood

An **exhaust hood** should be placed above range tops, grills, broilers, and deep-fat fryers. The exhaust hood provides ventilation; removes smoke, cooking vapors, and odors from the cooking area; and helps control fires.

To keep the exhaust hood from becoming a fire hazard, it should be cleaned periodically. A cloth and warm water should be used and a detergent solution should be used to remove grease film. The hood should be rinsed and dried. The grease filters should be washed weekly in the dishwashing machine.

## Steaming Equipment

Most **steamers** use steam under pressure to cook large quantities of food quickly and economically. Steaming preserves the natural flavor and color of food. Steaming also preserves water soluble nutrients. The steam may be generated by gas or electricity.

A **gauge** is used to measure the steam pressure in pounds per square inch (psi). As pressure increases the temperature increases. Low pressure (5-10 psi) is used for cooking meats. Higher temperature causes meats to fall apart. High pressure (10-15 psi) is used for cooking vegetables. Short cooking at high temperatures results in colorful vegetables.

The following safety precautions should be observed when using a steamer:

- Guard against burns when opening steamers. To prevent steam burns, do not attempt to open a pressurized steamer until the pressure has gone down. Then, lift the lid so the steam escapes away from the face.
- Be sure the safety valves are in working order before using.
- Never operate a steamer without water.
- If the steamer overheats or leaks steam, report the problem to your supervisor.

**Compartment Steamer.** Upright or compartment steamers consist of several compartments, one above the other. The door to each compartment is equipped with special gaskets and seals to keep the steam inside. The doors are tightly closed by clamps or wheels. Some are completely automatic. They can be set to defrost, then cook the food automatically. The ***convection steamer*** uses a fan to circulate the steam for faster cooking. Vegetables, chicken, and eggs are examples of foods that can be cooked in a compartment steamer.

**Steam-Jacketed Kettle.** Steam-jacketed kettles of varying sizes are used for cooking foods like soups, stews, stocks, and spaghetti. The steam-jacketed kettle is constructed so the steam flows around an inner compartment that holds the food. A tilting mechanism may be used for tilting the kettle and pouring the food.

The following safety precautions should be observed when using the steam-jacketed kettle:

- Guard against burns when opening steamers. To prevent steam burns, do not attempt to open a pressurized steamer until the pressure has gone down. Then, lift the lid so the steam escapes away from the face.
- Be sure the safety valves are in working order before using.
- Never operate a steamer without water.
- If the steamer overheats or leaks steam, report the problem to the supervisor.

## Baking and Roasting Equipment

Baking and roasting are done in ovens which usually cook food by circulating heated air around it. The two terms refer to the same process even though some foods are called baked, while others are called roasted. Heat is usually provided by electricity or gas. Microwaves and infrared rays are also used. The types of ovens include regular, stack, and convection. Special purpose ovens include revolving or carousel, hearth, pizza ovens, and reconstitution ovens. Newer types of ovens include microwave, impingement, and infrared. See Table 16.3.

***Regular*** or ***general-purpose ovens*** are usually located under the range top. These ovens usually have two shelves. The oven is controlled by a thermostat. Temperatures are marked in 25-degree intervals from 150°F to 550°F. Some ovens have timers that can be set to turn on and off automatically. Using the correct temperature and time are essential when baking and roasting.

***Stack ovens*** are a series of baking shelves stacked one on the other. Each shelf has a separate door. The temperature of each shelf is controlled by its own thermostat.

***Convection ovens*** use a fan to force hot air through the oven. These ovens bake more quickly than regular ovens. Because the circulating air provides even heat, more baking pans can be placed in the oven than in a conventional oven of the same size. Convection ovens may be used to cook most foods which can be cooked in a conventional oven. Convection ovens are also useful for defrosting and heating frozen foods.

Bakeries frequently use a ***revolving*** or

***carousel oven***. The trays inside the oven revolve like a ferris wheel. Baking pans are loaded onto each tray as it comes to the long, narrow, oven door. The trays revolve while the products bake, ensuring a constant, even temperature. Some bakeries use brick-lined, or hearth ovens. ***Pizza ovens*** reach a hotter temperature than conventional ovens. They are equipped with a special high-temperature thermostat control up to 700°F.

The ***reconstitution oven*** is used for rapid heating, especially of convenience foods. The oven has a combination heat and refrigeration cycle. Frozen foods may be stored either in the unit until reconstituting time or moved to the heating unit from the frozen storage area.

Each day after an oven cools, the oven racks should be removed and any burned on food should be scraped away with a metal scraper. Any crumbs or bits of burned on food should be brushed away with a long-handled brush. The bottom and sides should be wiped with a clean, damp cloth. The outside of the oven should be cleaned with an all-purpose cleaner. Weekly, after following the daily cleaning routine, the racks should be taken to the pot and pan sink to be scrubbed. The oven should be scrubbed out with a long-handled brush that has been dipped in hot detergent solution. A clean damp cloth should be used for rinsing out the oven. At this point the oven racks should be replaced. After the outside of the oven has been cleaned, the metal trim should be dried and polished.

For self-cleaning and continuous cleaning ovens, one should follow the manufacturer's instructions. It is possible to harm these ovens through incorrect care.

## Microwave ovens

***Microwave ovens*** cook many foods in much less time than a conventional oven. In foodservice operations, microwave ovens are used where speed is essential. They are used mostly for defrosting and cooking frozen foods, or for warming precooked foods for service. In microwave ovens, microwaves vibrate the molecules of food at very high speeds. This generates the heat which cooks the food. When the food is removed from the oven, cooking continues for several minutes and should be considered part of the total cooking time. Exact timing is essential when cooking in the microwave oven. Microwave ovens are best used for small amounts of food. They are not suitable for browning baked goods or roasts. Metal pans and metal trimmed dishes cannot be used in microwave ovens. Glass, ceramic, china, paper, and many plastics can be used. Food can be heated and served in the same dish.

Spills should be cleaned up in the microwave oven as soon as possible. The soiled area should be wiped with a cloth that has been dipped in hot detergent water and then wrung out. The inside of the oven should be dried thoroughly. The outside of the microwave should be cleaned weekly with a cloth that has been dipped in detergent water and wrung out or with an all-purpose cleaner.

## Other Ovens

Other new types of ovens include the impingement oven and the infrared oven. The ***impingement oven*** bakes and browns faster than conventional ovens and takes up less space. Some specialty pizza establishments are being equipped with impingement ovens. Inside the baking chamber of the oven are high-velocity hot-air jets above and below the food that impinge, or sweep away the cooler air surrounding food surfaces. Both gas and electric impingement ovens are available.

The ***infrared oven*** is heated by the radiant heat of an infrared bulb. The bulb emits a very hot light and a short-wave frequency to generate heat inside the baking chamber. The infrared oven is powered by electricity .

## Toasters

Toasters are used for toasting bread and heating prebaked items like French toast and waffles. Individual toasters usually toast one to four slices of bread at a time. The bread slices are put into slots, a brownness control is set, and a lever is pushed down to lower the bread slices and turn on the heating element. The bread pops up automatically when it is toasted to the proper degree of brownness. Conveyor toasters are used for toasting large amounts, approximately one loaf of bread at a time. For the **conveyor toaster**, the bread slices are inserted on a ferris wheel-like conveyor. When the toaster is turned on, the bread slices pass by the heating elements. It shuts off automatically when the bread reaches a pre-set degree of brownness. Toasters should be wiped on the outside and crumbs removed daily.

As with all equipment, food preparation equipment will need occasional repair. All equipment malfunctions, regardless of how minor, should be reported to the supervisor. Minor repairs made at the first sign of malfunction may prevent injuries and save the foodservice establishment costly major repairs at a later date. Each foodservice establishment will have established procedures for making repairs and contracting for repair work. A job description should outline one's responsibilities for reporting, making, or supervising repairs.

### ◆ Essential Questions: ◆
### Use and Care of Cooking Equipment

1. What safety hazards are associated with using cooking equipment? How can these hazards be avoided?

2. What is the difference between a convection oven and a general purpose one?

3. What are the general guidelines for cleaning and sanitizing equipment?

## Chapter Highlights

- Food preparation equipment includes scales, can openers, cutting equipment, mixing equipment, beverage equipment, and cooking equipment.
- Scales and balances used in foodservice include the spring-type model, the balance scale, the portion scale, and the baker's scale.
- Scales and other equipment can be kept clean by wiping the scales with a damp cloth after each weighing and washing thoroughly at the end of the day.
- Can opener blades should always be clean to prevent bacterial contamination. The can opener should be kept in good repair so that it cuts sharply and leaves no ragged edges.
- Cutting equipment includes the food slicer, food cutter or chopper, food processor, and the vegetable peeler.
- Safety precautions should be observed during use and cleaning of all cutting equipment.
- Floor, bench, and table model mixers use a variety of beaters, whips, and other attachments to mix foods.
- Beverage equipment includes coffee brewing equipment, tea dispensers, cold beverage dispensing machines, and ice making machines.
- Beverage dispensers should be cleaned daily and the manufacturer's instructions should be followed for use and care.
- Cooking equipment includes range tops, grills, broilers, deep fat fryers, exhaust hoods, steaming equipment, baking and roasting equipment, and toasters.
- Manufacturers' instructions should always be followed when cleaning cooking equipment. Incorrect care could cause damage to the interior surfaces of ovens.

# Chapter 17

## Cold Storage, Serving, and Cleaning Equipment

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9D Demonstrate appropriate use, care, and maintenance of tools, utensils, and equipment utilized in food production.

9J Perform appropriate tasks in food production according to industry standards.

9K Apply available technology in food production.

10D Select equipment and utensils appropriate for prescribed tasks.

### Chapter Vocabulary

- bain-marie
- cold food server
- conveyor-type dishwasher
- dish machine racks
- door-type dishwasher
- drying agent
- flight-type dishwashers
- freezer burn
- garbage disposer
- heated carts
- heated pass-throughs
- heated pellets
- hot and cold carts
- infrared lamps
- mobile refrigerators
- multiple-tank dishwashers
- pass-through refrigerator
- reach-in refrigerator
- roll-in refrigerator
- rollwarmer or drawer warmer
- salad case
- scrap trays
- single-tank dishwashers
- steam tables
- three-compartment sink
- walk-in refrigerator
- warewashing
- waterless food warmer
- work centers
- work stations

Cold storage equipment, hot and cold serving equipment, and dishwashing equipment are essential for foodservice sanitation. Cold storage equipment keeps perishable food out of the danger zone until it is ready for preparation or service. Hot and cold serving equipment keeps prepared foods out of the danger zone until they are served. Cleaning equipment cleans and sanitizes dishes, glassware, flatware, and equipment. Sanitizing may be done by heat, which can also be referred to as thermal, or with a sanitizing solution. Safety and energy conservation factors as well as the type of equipment and utensils being sanitized may influence the choice of which method to use.

## PROPER USE OF EQUIPMENT

Cold storage equipment includes refrigerators and freezers. Several different types and sizes are used in foodservice. The four types of refrigerators and freezers generally used in foodservice are walk-in, reach-in, roll-in, and pass-through. ***Walk-in refrigerators*** and freezers are small rooms lined with shelves. ***Roll-in refrigerators*** and freezers are small refrigerated rooms into which prepared food on trays can be rolled on carts and kept until serving time. Small ***reach-in refrigerators*** and freezers are usually located at work stations. These may be small refrigerated drawers. ***Pass-through refrigerators*** are placed between the kitchen and serving area. They have doors in front and back. As food is prepared, it is placed in the refrigerator from the kitchen side. As it is needed for service, it is removed from the opposite door.

Foods require different temperatures for cold storage. Raw fruits and vegetables and eggs should be kept cold (40° to 45°F). Dairy products should be kept colder (38° to 40°F). Meat, poultry, fish, and cooked dishes containing these foods should be kept in the coldest part of the refrigerator (32° to 36°F). All foods that are to remain frozen must be kept in a freezer (-10° to 0°F). Refer to Table 17.1 for illustrations of cold storage equipment.

### ***Refrigerators***

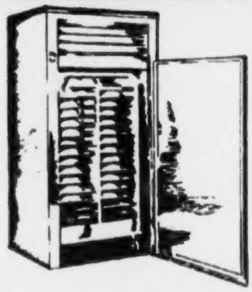
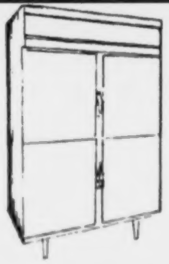
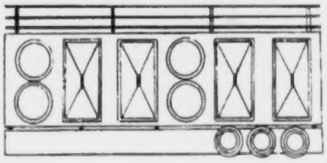
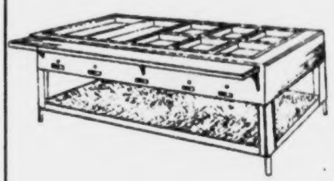
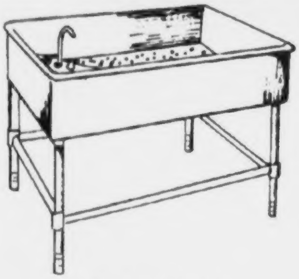
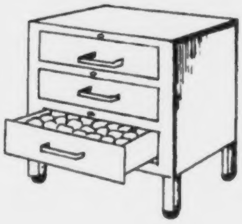
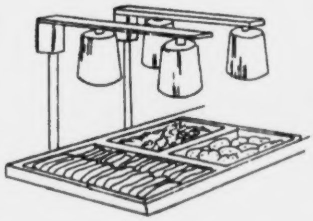
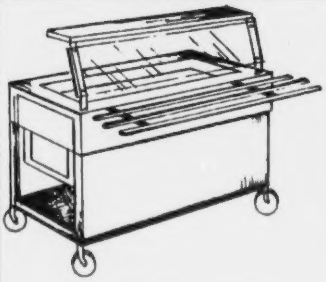
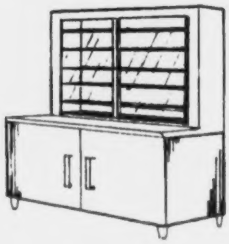
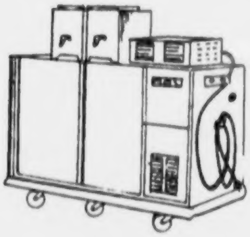
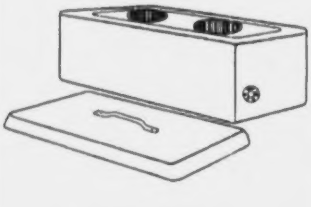
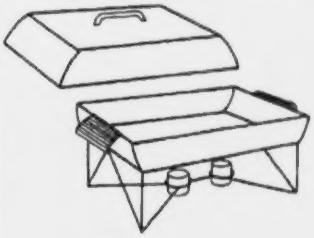
A refrigerator cools food and keeps it cool. A temperature below 41°F (5°C) in the refrigerator helps to prevent spoilage of food. Temperatures vary in different parts of the refrigerator. It is important to know the warmest and coldest parts of the refrigerator so foods can be stored accordingly.

To ensure proper air circulation and minimize temperature variations, several rules should be observed. Foods must not be crowded together. Containers should be dry and covered before they are placed in the refrigerator. Doors should be opened only when necessary. Hot foods should be placed in the refrigerator to speed cooling. The mechanical units of the refrigerator must not be obstructed.

Refrigerators require daily and weekly care. Spilled food should be wiped up immediately. The inside and outside of refrigerator doors should be wiped daily with a clean damp cloth dipped in a detergent water solution. Weekly, reach-in and pass-through refrigerators should be turned off, disconnected, and thoroughly cleaned with a sanitizing solution. The food should be removed and the inside of the unit and the shelves should be washed, rinsed, and dried. Baking soda or a sanitizer can be used to prevent odors. Refrigerators should be defrosted when frost is 1/4 inch thick on coils or other parts of the interior. Walk-in and roll-in refrigerators are usually thoroughly cleaned once or twice a year.

Temperature readings should be taken daily from all refrigerators. Some refrigerators have a recording thermometer which registers the temperature throughout a twenty-four hour period. Alarm bells or signals may signal when the refrigerator is not functioning.

## Cold Storage, Holding, and Serving Equipment

| | | |
|---|---|---|
| <br>Roll-in Refrigerator | <br>Reach-in Refrigerator | <br>Steam Table |
| <br>Waterless food Warmer | <br>Bain-Marie | <br>Drawer Roll Warmer |
| <br>Infrared Lamps | <br>Cold Food Server | <br>Salad Case |
| <br>Hot and Cold Carts | <br>Twin-well Counter Food Warmer | <br>Chafing Dish |

*⇨ Table 17.1*

### Freezers

Freezers are used to store commercially frozen food at temperatures of -10° to 0°F. The freezer may also be used to freeze small amounts of freshly cooked foods. Frozen foods held above 0°F lose color, flavor, and quality. Temperature readings should be taken daily to check the performance of the freezer. An alarm system should sound when the freezer is not functioning or someone becomes entrapped.

Proper freezer use helps maintain food quality and wholesomeness. All items placed in the freezer should be wrapped in an air-tight wrapping or placed in an air-tight container to prevent ***freezer burn***, which is the drying out of frozen food due to air exposure or dehydration, which results from loss of water from foods. Foods should not be refrozen because undesirable changes in flavor, color, or texture will result. Bacterial growth may also occur when frozen foods thaw. Thawed foods should be used within twenty-four hours.

The freezer should be cleaned daily by wiping the exterior with a damp cloth. Once a week, the exterior should be washed with a hot detergent solution, rinsed with a water and sanitizer solution, then dried.

The freezer should be defrosted once or twice a year, when frost becomes 3/8 inch thick on sides or coils. When defrosting, the freezer should be disconnected from the outlet. All food packages should be removed, covered or wrapped, and placed in the walk-in refrigerator. Frost should be scraped from surfaces with a broad, stiff plastic spatula or a special tool. A knife, ice pick, or other sharp object should never be used. Cold, not hot, running water should be used to help loosen ice. The interior should be washed with warm water and baking soda – one tablespoon of baking soda to one quart water. A sanitizer should be used to keep the freezer free of odors. The exterior should be washed with hot detergent solution, rinsed with water and sanitizer solution, then dried. The plug should be inserted into the outlet and the unit turned on. The freezer should run for at least half an hour before replacing frozen food. Frozen food should be inspected and inventoried, and older packages should be placed at the front or top for first use. The first in, first out method ensures that foods purchased first are used first.

Any signs that the refrigerator or freezer is malfunctioning should be reported to the supervisor immediately. Indications of malfunction include excessive cooling indicated by frost on the coils, unusual noises or vibrations, failure to operate, or failure to maintain proper temperature.

**◆ Essential Questions: ◆**
**Proper Use of Equipment**

1. What daily and weekly care is required for refrigerators and freezers?
2. What is freezer burn and how can it be prevented?

## USE AND CARE OF HOLDING AND SERVING EQUIPMENT

Holding and serving equipment is needed for hot foods, cold foods, and for transporting foods. Proper holding and serving equipment maintains the quality of food until it is served. Refer to Table 17.1 for illustrations of holding and serving equipment.

### Hot Food Units

Food can be kept warm in standard equipment, such as ovens and steamers, or in a container of hot water on the range top. Specialized warming equipment keeps food warm until serving time. These types of warmers include steam tables, waterless food warmers, bain-maries, heated pass-throughs, roll warmers, infrared lamps, heated carts, and heated pellets.

**Steam Table.** ***Steam tables*** keep foods hot and ready for immediate service. Steam tables are used in cafeterias and buffets. The table has compartments to hold pans of varying sizes. Steam heat is produced in a shallow water compartment below the bottom of the pans. The heat source may be gas or electric and the temperature of the water is controlled with a thermostat. The pans have covers to keep the heat in until serving time. Food should be arranged in the order it will be served. Foods on the steam table should be kept at a minimum temperature of 141°F. Spills should be wiped up immediately. The unit should be thoroughly cleaned immediately after use.

**Waterless Food Warmer.** The ***waterless food warmer*** provides different temperatures for different foods. Each section is controlled by valves and thermostats.

**Bain-marie.** A ***bain-marie*** is a deep pot for holding hot water. Another pot holding food may be placed inside. Bain-maries are also used for serving food.

**Heated Pass-throughs.** ***Heated pass-throughs*** are shelves or surfaces between the food preparation and service areas. The pass-throughs are equipped with overhead infrared lamps to keep hot foods placed there hot until serving time. The lamps can be adjusted to keep the food warm without cooking.

**Rollwarmers or Drawer Warmers.** ***Rollwarmers*** or ***drawer warmers*** are used to keep breads and sweet rolls warm. The warmer has separate drawer compartments with individual controls for each drawer. The rollwarmer keeps bread from drying out. Crumbs should be removed daily after the unit cools. Drawers should be washed with a mild detergent and water solution, rinsed, and dried with a soft cloth.

**Infrared Lamps.** ***Infrared lamps*** are used to keep foods warm in the kitchen or on the cafeteria counter or buffet. They are especially good for holding deep-fried foods. The lamps may be stationary or pull-down types. The lamps should cool before cleaning. The lamps should be washed with a cloth and mild detergent and water solution. The next step is rinsing and drying the lamps with a soft cloth. Excessive pressure should never be used in cleaning the lamps.

**Heated Carts.** ***Heated carts*** are used for transporting heated foods to the place of service. Carts may be designed to hold bulk food or individually portioned food. Some units are plugged in to preheat, transported, then plugged in again to keep the foods warm.

**Heated Pellets.** ***Heated pellets*** made of metal can be placed under trays to keep food warm. Two 10-gauge stainless steel shells are used as bases and heated before the dinner plate filled with the meal is inserted and covered. Hospitals frequently use this system. The pellets are usually heated in a conventional oven before being placed in the lower compartment of serving trays designed for this use. The pellets can also be chilled in the refrigerator or freezer to keep cold foods cold.

## Cold Food Units

Foods may be kept cold in standard refrigerator units or in special cold service units. Special cold food units include cold food servers, salad cases, mobile refrigerators, and hot and cold carts.

**Cold Food Server.** The ***cold food server*** is used to keep cold food chilled. It is sometimes called an ice-bain-marie. It may be either stationary or portable. Before serving time, the perforated inner lining is filled with crushed ice. The cold food is placed on this bed. As the ice melts, the water drips into the lower container.

The cold food server must be cleaned completely each day. Water is drained out the bottom and the ice is removed. The server is washed with a detergent solution and the unit is sanitized, rinsed, and wiped dry.

**Salad Case.** The ***salad case*** is a refrigerated cabinet with shelves for salad storage. Salads can be made in advance and stored or displayed in the case. The salad case should be cleaned with a detergent-water solution, rinsed, and dried with a soft cloth.

**Mobile Refrigerators.** ***Mobile refrigerators*** are used for storing foods and then distributing them to service areas. Chilled foods can also be placed in well-insulated carts and held until needed.

**Hot and Cold Carts.** ***Hot and cold carts*** combine features of both hot carts and mobile refrigerators. These carts are usually used for tray delivery. They are refrigerated on one side and heated on the other. Trays with cold foods are placed in the refrigerated side. Hot foods and cups for hot beverages are set in a drawer on a small tray in the hot side. Insulated jugs of coffee and tea may be set on top of the cart. Some models have beverage dispensers.

Other hot-cold carts use divided trays, one section for cold foods and the other for hot. Rubber gaskets separate the two sections as the tray slides in.

Food carts must be cleaned daily. Loose soil should be brushed out. The interior and exterior of the cart should be wiped with a detergent water solution, rinsed, and dried with a clean cloth.

Any malfunctions of holding and serving equipment should be reported to the supervisor. Malfunctions of temperature controls are the most urgent concern and should be reported to the supervisor immediately.

### ◆ Essential Questions: ◆
### Use and Care of Holding and Serving Equipment

1. What is the cleaning procedures for holding and serving equipment?
2. What is the difference between a Bain-marie and a Steam Table?

## USE AND CARE OF CLEANING AND DISPOSAL EQUIPMENT

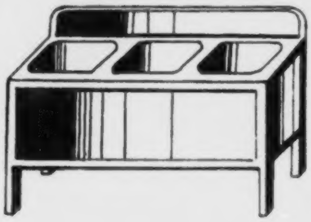
The cleaning of tools and utensils used in food preparation and the washing of glassware, dishes, and tableware are essential in a foodservice operation. Essential equipment includes the garbage disposer, pot and pan sink, and commercial dishwasher. Refer to Table 17.2 for illustrations of cleaning and disposal equipment.

### Disposer

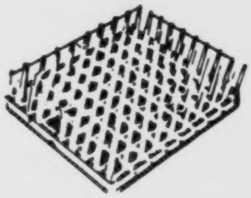
One of the best ways to dispose of the waste created in a foodservice establishment is to use a garbage disposer. A ***garbage disposer*** grinds garbage to a pulp and carries it into the sewer line.

The garbage disposer uses knife blades to grind the garbage and water to carry it into the sewer line. Pressing the "on" switch turns on the water and knife blades. Then the garbage is fed gradually into the disposer. One should be careful not to overload the machine. The operator should check to see that there are no large bones, corn cobs, cabbage cores, fruit pits, olive pits, toothpicks, silverware, or other items that would damage the knives in the disposer. Fingers and hands should be kept away from the knife blades. When the grinding action is complete, the machine should run at least five minutes longer to make sure that all garbage has been

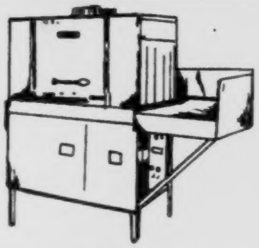
### Cleaning and Disposal Equipment



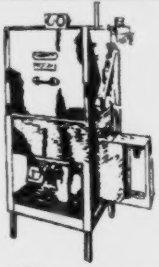
Three Compartment Sink



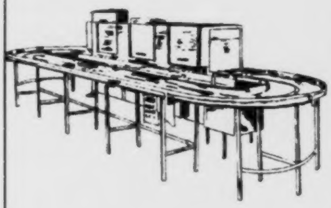
Dish Machine Rack



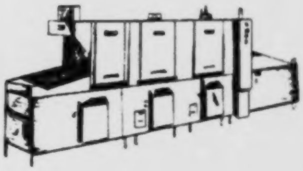
Single-tank Dishwasher



Door-type Dishwasher



Conveyor-type Dishwasher



Flight-type Dishwasher

*Table 17.2*

washed away from the knife blades. Always run warm water unless manufacturer says hot water is needed.

To clean the disposer, the switch should be turned to the "off" position. The cover should be removed and the inside and outside washed with water and a mild detergent, then rinsed with clear water. To deodorize, a weak solution of chlorine bleach should be poured into the clean disposer while it is running. This should be followed with cold tap water to rinse the chlorine off the metal parts. Commercial deodorizers may also be used.

When a garbage disposer is not available, garbage should be kept covered in sanitized garbage cans. The containers should be covered with tight fitting lids or covers. Plastic bags should be used as liners to keep the containers clean. All waste should be removed from the premises daily. After the containers have been emptied, the inside and outside should be cleaned thoroughly. This cleaning should be done in a place where food, equipment, utensils, or food preparation areas will not be contaminated.

## Pot and Pan Sink

Cleaning large or bulky utensils, such as pots and pans, requires continuous effort by foodservice employees. Pots and pans are usually washed in a ***three-compartment sink***. One compartment is used for washing, another for rinsing, and the third for sanitizing.

## Commercial Dishwasher

***Warewashing***, or dishwashing, is the single biggest task in any foodservice operation. To reduce the hours of hard labor and the amount of breakage, commercial dishwashers are used. These machines vary in size and design, but all of them require the same basic steps for effective dishwashing. These steps are scraping, prewashing, racking, washing, rinsing, sanitizing, air-drying, and storing clean utensils until the next use.

Most dishwashing machines fall into two categories: single-tank and multiple-tank machines. ***Single-tank dishwashers*** are used in smaller establishments, for specialized operations in large establishments, or in areas where space and weight are of prime consideration. These machines have a single tank for wash water. The pump recirculates the wash water to spray each rack of dishes placed in the machine.

The most common single-tank machines are the door-type and the conveyor-type. The ***door-type dishwasher*** has two doors on opposite sides of the machine that can be raised and lowered to allow dishes to be admitted and removed. Usually these two doors are interlocked so that if one door is raised or lowered, the other is also raised or lowered. When lowered into place, the doors provide a watertight compartment.

The other single-tank machine is the ***conveyor-type dishwasher***. Racks filled with utensils and tableware move through the machine on a conveyor chain, a continuous moving belt.

The ***multiple-tank dishwashers*** are used in large food establishments where large numbers of utensils are washed. These machines can wash from 6,000 to 18,000 utensils per hour. The most commonly used multiple-tank machines are the ***flight-type dishwashers***.

In flight-type machines, utensils and tableware are placed individually on a continuous belt that carries them into, through, and out of the machine. Operators at the start of the machine load the conveyor belt with utensils. Operators at the other end remove the clean utensils from the belt. These workers must wear clean heat-resistant gloves to protect their hands from the heat of the utensils.

Organization is the key to minimizing breakage in the dish room. The dish table should be organized with a pan of presoak solution for flatware and a place for each size plate and dish on the table. Racks should be provided for cups and glasses. This encourages dining room help to keep the dish table organized. Paper should be discarded, not mixed with dishes. Racks should be carefully organized for the dish machine. Cups and glasses should be placed upside down in ***dish machine racks***, which are what the dishes are placed on for washing. All of one size and type of dish should be loaded together in a rack. When loading dishes, heavy food soil should be scraped off. Heavily soiled dishes should be prerinsed before they go into the dish machine. Prerinsing may be done with a hand spray or may be done automatically by some dish machines. Silverware should be removed from the presoak solution and loaded into the dishwashing machine as recommended by the manufacturer, or placed in a flat dish basket. Knives and forks should be mixed with spoons to prevent nesting. The flatware racks should be loaded loosely to ensure thorough washing.

Operating a dish machine requires attention to detail. Before using the dish machine, one should be sure the machine is clean. The drain valve should be closed tightly. The scrap trays should be clean and in place. The ***scrap trays*** are screen-like devices at the bottom of the machine that collect food particles that were not removed when the utensils were scraped. The curtains in the dish machine should be checked to see that they are in place. The wash arms should be checked to be sure they are clean and that the spray openings are not clogged. Next, the operator should prepare the machine for use. The fill valves should be opened and the tanks filled. When full, the valves should be shut tightly. The detergent and drying agent reservoirs should be filled. The ***drying agent*** helps prevent water spotting.

The temperature of wash and rinse waters is critical to the sanitation of dishes. The wash temperature gauge should indicate a temperature of 140° to 160°F. The temperature of the first rinse should be 170°. The final rinse temperature should be 180° to 190°F for a proper sanitizing rinse. Some machines use an automatic chlorination system which adds chlorine for sanitizing in different cycles and uses lower temperatures.

One should follow the manufacturer's instructions for using the dish machine. After the dishes are washed, they should stand a few minutes to air dry.

Flatware should be unloaded onto a clean, dry cloth on a sorting table. The clean flatware should be handled only by the handles and placed in clean flatware trays. Racks of cups and glasses should be tilted for a moment to allow the water to run off their bottoms. The racks of clean cups and glasses should be placed on wheeled dollies. Clean plates should be stacked directly into plate carts. Clean plates should only be handled by the rim.

To clean the dish machine, the electric, gas, or steam heaters should be turned off. The drain valves should be opened and all the water drained from the tanks. The scrap trays should be removed and emptied into the garbage can. The scrap trays should be washed in a hot detergent solution. The trays should be spray rinsed and replaced in the dish machine. The wash arms should be removed and washed using a hose and brush. The curtains should be removed, scrubbed, and washed in a hot detergent solution. The inside of the machine should be sprayed thoroughly with a hose. Also the work tables should be hosed off, then scrubbed with a hot detergent solution. The dish machine and work tables should be wiped with a clean dry cloth. Finally, the walls and floors of the dish room should be scrubbed.

Any malfunctions of cleaning and disposal equipment should be reported to the supervisor immediately. For commercial dishwashers, malfunction could be indicated by low temperatures in the wash, rinse, or dry cycle or by dishes that do not come clean. For the disposer, malfunction could be indicated by unusual noises, overheating of the disposer motor, incomplete grinding of food wastes, or a back-up of food waste into the receiving portion of the disposer.

### ◆ Essential Questions: ◆
### Use and Care of Cleaning and Disposal Equipment

1. What are the types of dishwashing machines used in commercial foodservice operations?

2. What temperatures are required for washing, first rinse, and final rinse when using a commercial dish machine?

3. How should dishes be handled after they are washed?

## WORK STATIONS

Each foodservice facility is divided into ***work centers*** called ***stations***. Each station is named for the tasks performed there. The stations are often referred to as beverage, cold, hot, bake, serving, and dishwashing stations. Certain equipment is associated with each work station. Beverage equipment is used in the beverage station. The cold food station must be near refrigerators and areas where vegetables and fruits are stored. The hot food station uses cooking equipment for preparing hot foods. The bake station uses ovens to prepare baked products. Serving stations utilize all types of foodservice equipment. The dishwashing area utilizes pot and pan sinks and dishwashers.

The number and types of stations depend on the menu, the type of service, and the size of the kitchen. A restaurant with a menu featuring a wide variety of food demanding much preparation needs more stations than one with a limited menu. A restaurant using formal table service needs more stations than one using counter service. The space available for the kitchen limits the number of stations possible. Refer to Figure 17.1 for a sample work station layout.

## Placement Of Stations

The placement of the work stations is determined by the flow of both the food and the service. Usually, receiving and storage stations are at the beginning of the line. Each food storage area is located close to the station using it most. The baking station needs access to the dry storage area where flour, sugar, and other dry ingredients are stored.

The hot food stations are close to the refrigerators and freezers where meat, chicken, and fish are stored. The vegetable preparation station is near the vegetable storage area. This area may also be near the dining area since appetizers and salads are served before the main course.

The receiving and storage stations are followed by meat and vegetable preparation stations. Cooking, holding, and serving stations follow. Potwashing and dishwashing areas are not part of the food flow. The potwashing area is usually located close to the equipment storage area. The dishwashing area is near the dining room and storage areas for clean dishes and tableware. If the establishment has its own bakery, the bakery may also be a separate area. Baked goods and desserts are usually prepared before the peak hours of service and may be served from the pantry.

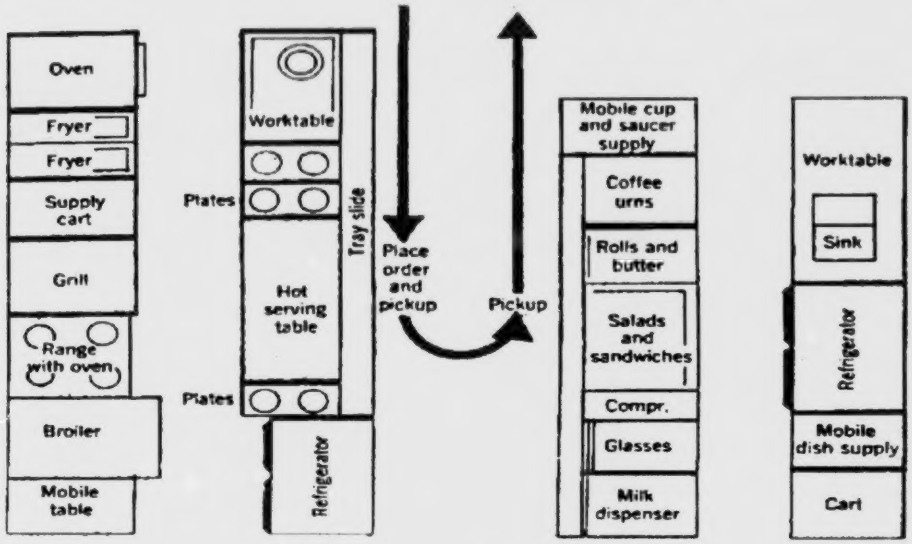

Oven
Fryer
Fryer
Supply cart
Grill
Range with oven
Broiler
Mobile table
Worktable
Plates
Hot serving table
Plates
Refrigerator
Tray slide
Place order and pickup
Pickup
Mobile cup and saucer supply
Coffee urns
Rolls and butter
Salads and sandwiches
Compr.
Glasses
Milk dispenser
Worktable
Sink
Refrigerator
Mobile dish supply
Cart

Figure 17.1

## Placement Of Equipment In Stations

The work flow in a station is usually from left to right. This may be a problem for some left-handed workers. Raw food and ingredients are entered at the left of the station. The finished food is removed at the right. Each station has the equipment needed for the tasks to be performed there. The placement of equipment in each work station is planned according to the flow of food within the station. As much as possible, small equipment is placed within arm's reach of the worker. Large pieces should be within a few steps. Work tables and counters are important parts of all work stations. The basic "placement" principle is to place and store equipment near its point of use.

### ◆ Essential Questions: ◆
### Work Stations

1. How should work stations in a foodservice establishment be located? What are the main stations involved?
2. What determines the placement of work stations in a foodservice establishment?

## Chapter Highlights

- Cold storage equipment includes walk-in, reach-in, roll-in, and pass-through refrigerators and freezers.
- Foods require different temperatures for cold storage: raw fruits and vegetables (40° to 45°F); dairy products (38° to 40°F); meat, poultry, fish, and cooked dishes (32° to 36°F); and frozen foods (-10° to 0°F).
- All items placed in the freezer should be wrapped to prevent freezer burn.
- The temperatures of refrigerators and freezers should be checked at least twice a day. The units should be cleaned regularly and defrosted when needed.
- Holding and serving equipment includes warmers, cold food units, and hot and cold carts.
- Use and care suggestions from the manufacturer should be followed for holding and serving equipment. Malfunctions of equipment should be reported to the supervisor.
- Cleaning and disposal equipment includes the garbage disposer, pot and pan sink, and the commercial dishwasher.
- Sanitation is important when using cleaning and disposal equipment. All waste should be removed from the premises daily. Care should be taken to make sure water temperatures are correct. The wash temperature gauge should indicate a temperature of 140° to 160°F. The temperature of the first rinse should be 170°. The final rinse temperature should be 180° to 190°F for a proper sanitizing rinse. Some machines use an automatic chlorination system which adds chlorine for sanitizing in different cycles and uses lower temperatures.
- A foodservice facility is divided into work centers or stations. Typical work centers include beverage, cold, hot, bake, serving, and dishwashing stations.
- The placement of work stations is determined by the fl[illegible] of food and service. Work within a station usually moves from left to right.

# Chapter 18

## Tools and Utensils

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.
9D Demonstrate appropriate use, care, and maintenance of tools, utensils, and equipment utilized in food production.
10D Select equipment and utensils appropriate for prescribed tasks.

### Chapter Vocabulary

au gratin dish
brazier
Carborundum stone
chafing dish
China cap
cutlery
double boiler
meniscus
paddle
rechaud lamp
samovar
sharpening steel
sieve
skimmer
spring-form pan
thermometer
thermostat
tools
utensils

A variety of small equipment is used in preparing and serving food. Most small equipment used in foodservice establishments can be classified as either tools or utensils. ***Tools*** are hand-held equipment, such as knives, spatulas, spoons, and turners. ***Utensils*** are containers for holding food. Foodservice employees should report tools and utensils needing repairs to the supervisor.

Many of the tools and utensils used in the foodservice establishment are similar to those used in the home. Those used in commercial foodservice may be larger and more durable, but their uses are the same.

## TOOLS AND UTENSILS

Tools are used in all aspects of food preparation. Some are also used in serving food. Foodservice workers should be able to identify the tools available and select the appropriate one for each task.

### *Measuring*

Quality in food production cannot be achieved unless ingredients are carefully measured. Costs cannot be controlled unless foods are carefully portioned or divided into servings of consistent size.

**Cups and Spoons.** Measuring cups and spoons are used for measuring liquid and dry ingredients that are not weighed. These types of measures include dry measuring cups, liquid measuring cups, and measuring spoons.

A set or "nest" of four U.S. Standard graduated dry measuring cups includes 1 cup, 1/2 cup, 1/3 cup, and 1/4 cup. Those made of stainless steel or aluminum are preferred.

Liquid measuring containers have a rim above the graduated measurements to prevent spilling the liquid. Clear plastic is often used in foodservice because glass chips easily. Liquid measuring containers are available in several sizes including the following:

- 1-cup size with lines indicating 1/4, 1/3, 1/2, 2/3, and 3/4-cup intervals
- 1-pint size with lines indicating 1/4, 1/3, 1/2, 2/3, 3/4, and 1-cup intervals
- 1-quart size with lines indicating cup intervals
- 2-quart size with lines indicating cup intervals
- 1-gallon size with lines indicating quart intervals

The measuring cups also have markings indicating metric measures.

**The Meniscus**

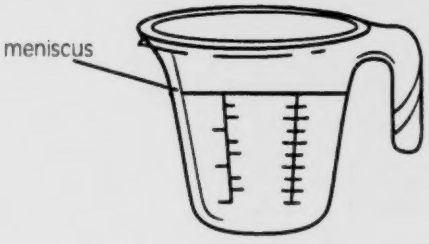


*Figure 18.1*

Refer to Figure 18.1 which shows how to read the liquid measuring cup. To measure liquid, read the lowest point of the meniscus. The ***meniscus*** is the curved upper surface of a column of liquid. To measure liquid, place liquid measuring cup on a level surface. At eye level, read the lowest point of the meniscus.

A liquid/dry measuring cup is a measuring cup for either liquid or dry ingredients. It has limited use for dry ingredients because only full cup measurements can be leveled off. The 1 cup measure has fractions indicated by ridges on the outside and grooves on the inside.

A measuring and mixing bowl set consists of 1 cup, 1 1/2-pint, and 2-quart containers that have tapered pouring spouts. These bowls can be used both for measuring and mixing.

Measuring spoons are used for measuring small amounts of liquid or dry ingredients. A U.S. Standard graduated set includes 1/4 teaspoon, 1/2 teaspoon, 1 teaspoon, and 1 tablespoon. Some sets include a 1/8 teaspoon as well.

When using cups and spoons for measuring, observe the following guidelines:

- Use cups which have the rim above the "full cup" line and a pouring lip or spout for measuring liquids.
- Use cups without the rim or pouring lip for measuring dry ingredients and shortening.
- Use graduated spoons for measuring small amounts of liquids and dry ingredients.
- Use larger measures, whenever possible, to avoid filling the smaller measure several times.

When measuring specific ingredients using cups and spoons, the following guidelines will ensure accuracy:

- Flour– Usually weighed or stirred and measured in large quantities. In smaller quantities, sift flour before measuring to make it light and to remove any lumps. Spoon or scoop sifted flour gently into the cup. Do not shake, pack, or hit the side of the measuring cup. Move a straight-edged knife or spatula across top edge of measuring container to remove excess flour. Refer to Figure 18.2.
- Confectioner's sugar – Measure in the same way as flour.
- Brown sugar – Pack firmly into measuring container (unless stated otherwise) to ensure accuracy of the measurement. When loosely packed, the amounts of brown sugar vary from one measuring to the next.
- Fats (solid) – Measure by pressing firmly into measuring container and leveling off.
- Liquids – Place measuring cup on a flat surface and read measurement at eye level.
- Few grains, speck, pinch – Use amount of the ingredient that can be held between thumb and forefinger.
- Fractions of a teaspoon or tablespoon – Fill and level correct size measuring spoon. If the correct size spoon is not available, use a full teaspoon or tablespoon. Run a knife lengthwise through the center of the spoon for a 1/2 spoonful measure and then crosswise through the center of the spoon to divide the ingredients into 1/4 spoonfuls.

When caring for measuring equipment, observe the following practices:

- Wash thoroughly after each use.
- Use plastic measures carefully because they warp easily and are then no longer accurate.
- Handle glass measures carefully because they chip easily.
- Care for measuring spoons by using them only for measuring not for mixing or stirring.
- Store measuring equipment carefully because bent measures are no longer accurate.

**Procedure for Measuring Flour**

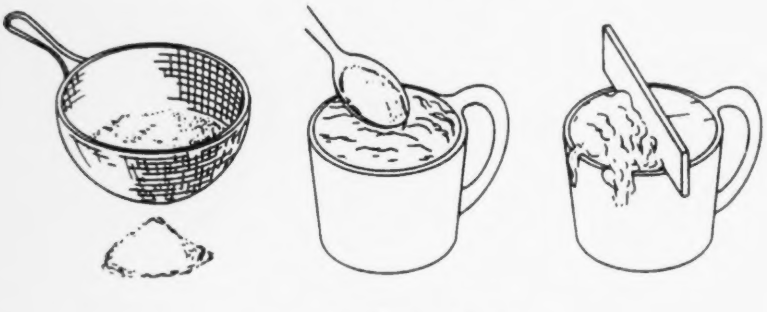


***Figure 18.2***

Source: *Introductory Foods*, M. Bennion, Copyright © 1995 by Prentice Hall. Reprinted with permission of Prentice Hall.

## Thermometers

***Thermometers*** are used in foodservice to measure the temperature of food, fat, and air. A confectionery thermometer is used to measure the temperature of frosting or candy during preparation A probe-type meat thermometer is inserted into a large piece of meat, such as a roast or poultry, to measure its internal temperature while cooking. A dial-type thermometer is used for checking the temperature of the air inside ovens, refrigerators, and freezers. A deep-frying thermometer is used to check the temperature of fat used for deep-fat frying. Instant-read thermometers also are used by many chefs.

Ovens, refrigerators, freezers, and deep fryers are equipped with regular type thermostats. A ***thermostat*** is a device that automatically measures and adjusts the temperature. However, the accuracy of thermostats should be checked with a thermometer regularly. Examples of thermometers are shown in Figure 18.3.

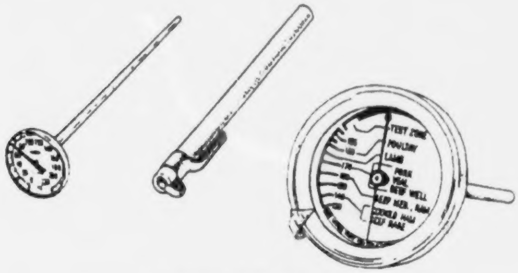


***Figure 18.3***

## Cutting Tools

***Cutlery*** or cutting tools are essential in every kitchen. There are so many types of knives and cutting devices that selecting the right one for a particular task can be a puzzling experience. Each has been made for specific uses. Selection of the best cutting tool for each task can make the job easier and help ensure that the task is done correctly.

## Knives

Illustrations and purposes of some of the most commonly used knives, their common sizes, and their common uses are described in Table 18.1.

Knives which are kept sharp are both easier and safer to use. Less pressure is required when the knife is sharp, and there is less danger that the knife will slip. A ***Carborundum stone*** is used to sharpen knives. A ***sharpening steel*** is used to true, which means to smooth out irregularities on the cutting edge of a knife that is sharp. The steel may be flat, cylindrical, or oval and may have a steel shaft.

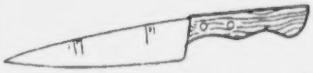
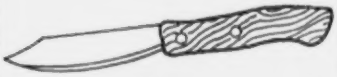
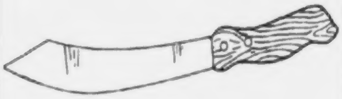
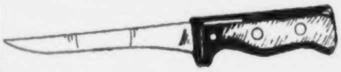
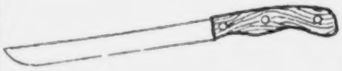
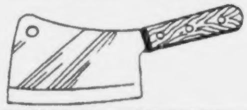
Knives should be stored in slotted wood or rubber racks. The racks should be mounted on the wall in an accessible place. Knives should never be stored in drawers.

## Other Cutting Tools

A variety of other cutting devices are used in food preparation. One of the most useful is a 6-inch floating blade peeler. A peeler may be used for peeling and for slicing thin strips of fruits and vegetables. It may also be used for removing the core from fruits and vegetables. A grater is used to grate, shred, slice, and serrate foods, such as carrots, cabbage, and cheese. It may be either square or flat with different shapes and sizes of slots or grids. Utility shears are used for snipping parsley, cutting garnishes, and trimming pastry and many other kitchen tasks. Specialized cutters and slicers include cheese cutters, egg slicers, butter cutters, tomato slicers, potato cutters, and ballers. Also included are biscuit, doughnut, cookie and other cutters used in baking.

Hard rubber or plastic cutting boards are used in foodservice establishments. These boards are more sanitary than wooden ones. Wooden cutting boards may harbor bacteria which can be transferred to other foods cut

## Knives Commonly Used in Foodservice

| Knife | Description | Uses |
|---|---|---|
| French Knife  | 8 to 12 inch blade of carbon or stainless steel | Slicing and cutting raw fruits and vegetables; slicing hot or warm meat; chopping small quantities of materials, such as parsley, onions, and nuts; dicing and mincing recipe ingredients |
| Paring Kinfe  | 3 to 3 1/2 inch blade of carbon or stainless steel | Paring fruits and vegetables; removing eyes from potatoes |
| Butcher Knife  | slightly curved, heavy, and rigid with a blunt tip | Disjointing fowl; preparing spareribs, pork loin; cutting brisket, short ribs from rib roast, chuck roast, rump roast; cutting lobster, crawfish; scaling fish, removing head of fish; cutting sweet potatoes, cabbage, watermelon, squash |
| Boning Knife  | 5 to 6 inch blade made of stainless or carbon steel; wooden or plastic handle | Disjointing fowl, separating meat from bone, dicing raw meats, coring lettuce |
| Slicer Knife | 10 to 16 inch carbon or stainless steel blade, which may be serrated, wooden or plastic handle | Slicing tomatoes, lettuce wedges; slicing roast or ham; cutting cakes or sandwiches |
| Bread Knife  | 9 inch blade with serrated edge | Slicing bread or cake |
| Cleaver Knife  | 7 inch heavy, thick oblong blade | Splitting heavy bones and joints, cutting chickens into serving portions; opening lobster |

⇨ *Table 18.1*

on the board. It is recommended to use color coded cutting boards to prevent cross-contamination. For example, use a yellow color-coded cutting board for poultry and a blue color-coded cutting board for salads.

## Food Handling Tools

Tools used for handling food include spoons, ladles, scoops, spatulas, tongs, and forks. These tools are used for stirring, lifting, and turning food during preparation. They also are used for portioning and serving food. See Table 18.2 for illustrations of common food handling tools.

**Spoons, Skimmers, and Paddles.** Spoons may be made of wood, stainless steel, or plastic. They may be solid, slotted, or pierced. Wooden spoons are used for stirring, mixing, creaming, tossing, folding, and serving. Solid spoons are used to lift foods, including the liquid, out of the pot. They are also used to spoon liquids over foods. Slotted or perforated spoons are used to lift foods out of the liquid in which they were cooked. ***Skimmers*** are used to remove scum, grease, or other items from the top of stocks, gravies, and other liquids. They are also used to lift food out of hot liquid. Long-handled wooden or metal ***paddles*** are used to stir food in deep pots and steam kettles.

**Ladles.** Ladles are used for transferring foods from one container to another. They are often used for lifting soups, gravies, and

**Common Food Handling Tools**

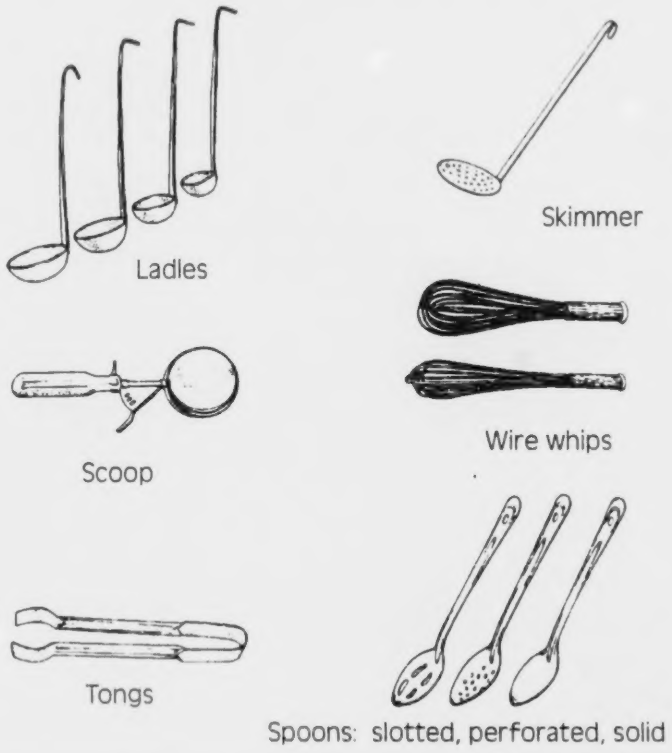


*Table 18.2*

sauces. Ladles are also used for portioning these foods. Ladles are made of stainless steel. They come in a variety of sizes from 1/2-ounce to 32 ounces to aid in portioning various foods.

**Scoops.** A scoop is a metal half-balled shaped cup with a movable strip on the inside of the cup. The strip is operated by a clip on the side of the handle. The strip scrapes the food out of the cup when the clip is pressed. Scoops are used to fill muffin cups or drop cookie dough on baking sheets. Some deep-fried foods are also portioned with scoops.

Scoops also measure serving portions. Numbers are used to indicate different scoop sizes. The number indicates the number of servings per quart. For example, a No. 8 scoop equals eight servings per quart. The larger the number, the smaller the scoop. Table 18.3 gives common scoop sizes.

**Spatulas.** Spatulas are actually flexible blade knives. Their blades are dull and have a rounded tip. Spatulas are used to level off ingredients when measuring. They are used to remove food from flat pans. They are also used for spreading frostings, sandwich fillings, butter, salad dressing, and other soft foods. Several spatulas commonly used in food preparation are narrow spatulas, wide spatulas, pie knives, and sandwich spreaders. Plastic or rubber spatulas are used for scraping bowls.

Larger offset spatulas or turners are used to turn meat, pancakes, potatoes, and other foods while browning. The offset or bend keeps the hand away from the hot surface. The turner's blade may be solid or perforated. Turners can also be used as a scraper to remove grease and other materials. They are made of stainless steel or plastic and have a thin flexible blade.

**Tongs.** Tongs are used for both preparing and serving food. They are used to turn meat while broiling and to lift vegetables like corn-on-the-cob from a steamer or hot liquid. They are also used to serve food without touching it with the hands. Ice tongs are used for serving ice cubes.

**Forks.** Two-tine or cook's forks are used for turning meat while browning or cooking.

**Common Scoop Sizes**

| Scoop Number | Weight | | Measure | |
|---|---|---|---|---|
| | Metric | Customary | Metric | Customary |
| 8 | 142 g | 5 oz. | 125 ml. | 1/2 c. |
| 10 | 113 g | 4 oz. | 100 ml. | 2/5 c. |
| 12 | 85 g | 3 oz. | 83 ml. | 1/3 c. |
| 16 | 57 g | 2 oz. | 62 ml. | 1/4 c. |
| 20 | 47 g | 1 2/3 oz. | 48 ml. | 3 1/5 T. |
| 24 | 43 g | 1 1/2 oz. | 40 ml. | 2 2/3 T. |
| 30 | 35 g | 1 1/4 oz. | 33 ml. | 2 1/5 T. |

*Table 18.3*

Forks are also used to hold meat and other foods while they are sliced.

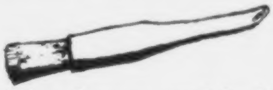
### Beating and Whipping

Rotary beaters are used for beating small quantities of eggs or batter. Wire whips or whisks are used for whipping and blending. They are used for whipping egg whites, cream, and batter, and for blending gravies, sauces, and soups.

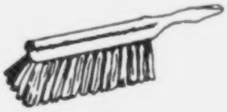
### Brushing

Many kinds of brushes are used in foodservice operations. Brushes are used for spreading ingredients, removing substances from surfaces, and cleaning food, utensils, and equipment.

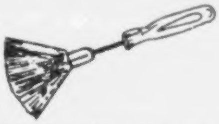
Pastry brushes are used for spreading melted butter or thin mixtures like icings or egg and water. They have soft bristles.



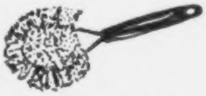
Bench brushes are used for brushing away excess flour. They have long, soft bristles.



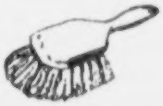
Grease brushes are used for removing grease from soups, stocks, and sauces. They have special bristles for attracting grease.



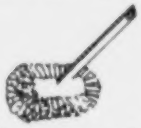
Vegetable brushes are used for cleaning vegetables and fruits. They have stiff bristles.



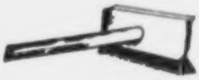
Pot brushes are used for cleaning food from pots and pans. They have metal bristles.



Kettle brushes are used for cleaning deep kettles. They have stiff bristles and a long handle.



Oven brushes are used for removing crumbs from the oven floor. They have soft bristles and a long handle. They may have a scraper opposite the brush.



### Baking

Several specialized tools are used in preparing baked products. A sifter is used to sift flour or powdered sugar and to blend dry ingredients. A pastry blender is used to cut shortening into flour. A rolling pin is used to roll out pastry, rolls, and cookies. A dough scraper is used to scrape the dough from the board. Pastry bags are used to make shaped pastries and decorations. The bag is used with a variety of tips or tubes designed to create different shapes when a soft food like icing is squeezed through it. A pastry wheel is used for cutting pastry. An edger or crimper is used for making a decorative edge on pie crusts and pastries.

◆ **Essential Questions:** ◆
**Tools and Utensils**

1. What is the difference between tools and utensils?
2. What are the different types of thermometers used in foodservice operations?
3. How are the different size scoops used in foodservice?

## UTENSIL SELECTION

Utensils are containers used to hold food. Utensils include bowls, pots and pans, pitchers, and a variety of other containers. Table 18.4 shows common utensils used in foodservice operations.

### Storing

Bins are used for storing large amounts of staples in foodservice operations. They are usually on casters for easy moving. Heavy plastic storage containers with snap-on covers are used to keep food from drying out.

### Mixing and Molding

Bowls are used for mixing and combining ingredients. Bowls may be assorted sizes and shapes. In foodservice operations, the bowls are made of stainless steel because they do not break.

Molds come in a variety of shapes and are used for gelatins and desserts. Molds may be made of copper, aluminum, glass, or earthenware. Almost all foods shaped in molds are served cold.

### Shaking and Straining

Some containers used in foodservice have holes through which food is shaken or which separate solids from liquid. A salt shaker is a common example of a shaker. Mesh strainers in a variety of sizes and shapes are used for separating solids and liquids. The mesh varies from fine to coarse. A ***sieve*** has similar uses, but is a stainless steel perforated cup. A colander is a perforated stainless steel bowl with feet or a base and handles for lifting. It is used to drain cooked foods like pasta and to rinse salad greens and berries.

A ***China cap*** is a perforated cone-shaped bowl with a long handle and a hook for hanging it on the side of a pot. It is used for straining liquids from solids when making soups and gravies. It also is used to puree foods. A pointed wooded mallet is used to force the food through the strainer.

### Cooking

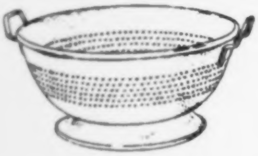
Frying pans, skillets, or sauté pans are used for cooking foods in a small amount of fat. Saucepans are used for cooking small amounts of sauces, vegetables, or other foods. Saucepans have straight sides, long handles, and covers. Stock pots are used for cooking larger amounts of food like soup, chili, spaghetti, or corn-on-the-cob. They have deep, straight sides, a handle on each side, and a cover. A ***double boiler*** is used for foods which must be kept below the boiling point, such as puddings and sauces. A double boiler is also used to keep foods warm without overcooking. It has two sections, the lower one for water, the upper one for the food. It is used with a cover. A ***brasier*** is a large covered utensil used for braising meats and poultry.

### Baking and Roasting

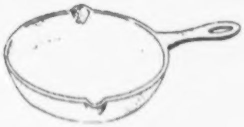
A variety of pans are used for baking and roasting. Baking pans are shallow, rectangular pans. They are used for foods like macaroni and cheese, roasted meats, cakes, and gelatin salads. Roasting pans are rectangular pans with deep sides used for roasting meat, poultry, and fish. A trivet or roasting rack is usually placed on the bottom to hold the meat out of the juices. Roasting pans usually have a deep cover. Pizza pans are shallow round pans used for baking pizza.

Cake pans may be round or square. Round pans are used for layer cakes. Square ones are used for coffee cakes or one layer cakes. ***Spring-form pans*** come with or without a center tube. The latch on the side of the pan is opened after baking for easy removal of the cake. A similar pan with a removable tube is often used for angel food cakes. Rectangular baking sheets are used for baking cookies, rolls, and biscuits. Loaf pans are used for baking loaves of bread. Muffin pans are used for baking corn muffins, rolls, and breakfast muffins.

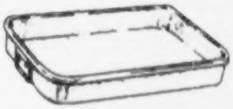
## Common Utensils Used in Foodservice Operations



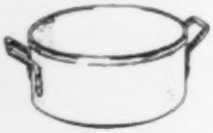
Colander



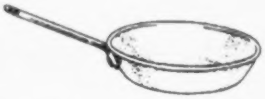
Cast iron skillet



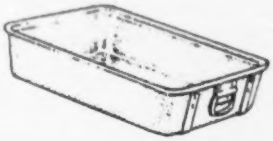
Bake pan



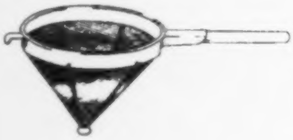
Brazier



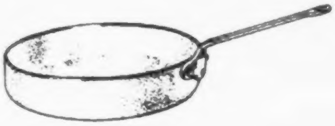
Slope-sided sauté pan



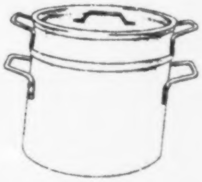
Roasting pan



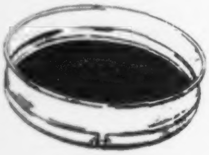
China cap



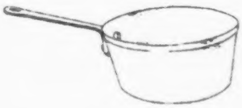
Straight-sided sauté pan



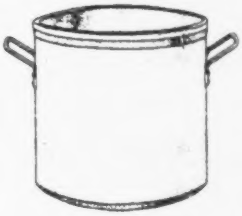
Double boiler



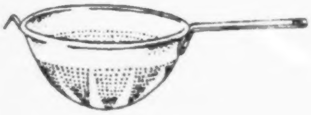
Sieve



Saucepan



Stock pot



strainer

***Table 18.4***

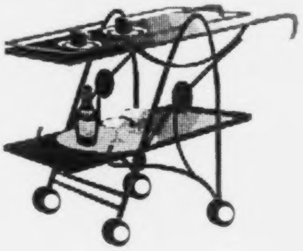
## TRANSPORTING EQUIPMENT

A variety of small equipment is needed for transporting and serving food and beverages. Maintaining quality, safety, sanitation, and appearance are the major objectives involved in transporting food.

The type foodservice system determines what type of equipment is needed to transport food from one location to another. Food carts and carriers are essential for the safe transportation of food.

### To and From the Dining Area

Carts are useful for moving items to and from the dining area in a restaurant or cafeteria. The bussing cart is used for storing and bussing items in the dining area. The service wagon is used for cooking near the table or keeping foods warm in the dining area. The dessert or pastry cart is used for displaying these items to customers at their tables. Food carriers are used for transporting foods within a large establishment like a hotel or to another location off site.



Large establishments must sometimes keep foods or beverages hot for a period of time. Containers called food warmers are used to keep foods warm. The ***samovar*** dispenses hot liquids, such as coffee or tea. Containers are utility thermal beverage containers (usually three or five gallon) that keep beverages hot for serving and transporting. ***Chafing dishes*** are often used on buffets. A chafing dish is a pan for preparing or keeping foods hot at the table. A portable or canned heat source, sometimes called a ***rechaud lamp***, is usually used under the chafing dish to keep it warm. A steam pan heated by an electric calrod unit or lighted wicks in a flammable alcohol may supply the heat for some chafing dishes.

Various other utensils are used for serving. Pitchers are used for both hot and cold liquids. Common ones include a coffee server, a water or juice pitcher, and a gravy boat. Large serving dishes are used for buffets or large groups. Individual table items include salt and pepper shakers, containers for sugar and sweetener, cream pitchers, and bread baskets.

Sometimes main dishes are cooked and served in the same containers. Casseroles or egg dishes may be served in an ***au gratin dish***, which has a browned or crusted top usually of breadcrumbs, cheese, or a rich sauce. A sizzle platter, a platter with a preheated removable liner, may be used to serve hot foods like steak or Mexican food.

### In Hospitals and Long-term Care Facilities

Hospitals and long-term care facilities often use carts that are equipped with temperature-control devices. Combination hot and cold carts are loaded with the correct number of served trays and then transported. The carts are delivered to each floor or wing of the facility. The cart is plugged in to maintain correct temperatures while the trays are served from the cart to the patients. The cart may also have a container with a spigot for serving beverages or soups.

Bulk food carts are used to move larger amounts of food from a central kitchen to another location where the food is served. These carts are used in some hospitals where trays are made up in floor kitchens and delivered to patients.

### To the Catering Site

Banquet carts may be used by caterers and large hotels and motels to transport served plates to the location of the banquet.

Plates are covered with domed covers and stacked on shelves in the cart or food warmer. Bakers may place baked products on trays in a tall bakery cart for transporting.

Equipment, such as glassware, dishes, cooking utensils, and flatware, may be transported in carrying cases. Heavy cardboard, wire or stainless steel glass racks, or wooden boxes with dividers may be used for packing glassware. Heavy cardboard boxes may also be used for packing flatware, kitchen utensils, and other nonbreakable items, such as linens and paper goods. Some dishes and serving platters may need to be wrapped in cloth before being placed in carrying cases.

### ◆ Essential Questions: ◆
### Transporting Equipment

1. What types of small equipment are used for transporting and serving food in restaurants and cafeterias?
2. What types of utensils are used for shaking and straining, cooking, baking, and roasting?

## Chapter Highlights

- Tools are hand-held equipment, while utensils are containers for holding food.
- Measuring cups and spoons are used for measuring liquid and dry ingredients which are not weighed. Both the appropriate container and the appropriate measuring technique must be used to ensure accuracy.
- Thermometers are used in foodservice to measure the temperature of food, fat, or air. The types of thermometers include confectionery, meat, deep-frying, and dial-type. The accuracy of oven, refrigerator, freezer, and deep fryer thermostats should be checked regularly with a thermometer.
- Knives commonly used in foodservice include French knives, paring knives, butcher knives, boning knives, slicers, bread knives, and cleavers. A Carborundum stone is used for sharpening knives. A sharpening steel is used to true knives. A hard rubber or plastic cutting board is used for sanitary reasons. For safety, knives should be stored in racks.
- Other cutting devices used in foodservice include peelers, graters, utility scissors, and a variety of specialized cutters and slicers.
- Tools for handling food include spoons, ladles, scoops, spatulas, tongs, and forks.
- Small equipment used for beating and whipping food includes rotary beaters and wire whips or whisks.
- Many kinds of brushes are used in foodservice operations including pastry brushes, bench brushes, grease brushes, vegetable brushes, pot brushes, kettle brushes, and oven brushes.
- Several specialized tools used in preparing baked products are a sifter, pastry blender, rolling pin, dough scraper, pastry bags, pastry wheel, and edger.
- Bins and other storage containers are used for food storage.
- Bowls are used for mixing and combining ingredients, while molds are used for shaping gelatins and desserts.
- Containers for shaking and straining include shakers, strainers, sieves, colanders, and China caps.
- Foods are cooked on top of the range in pots and pans. Common ones include frying pans, skillets, sauté pans, saucepans, stock pots, double boilers, and brasiers.

# Chapter 19

## The Foodservice Pantry: Food and Supplies

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- blast freezers or plate freezers
- blind receiving
- fill
- first-in, first-out (FI-FO)
- grading
- hygrometer
- imitation
- inventory
- invoice
- issuing
- nutrition labeling
- pack
- percent daily value
- perishable foods
- perpetual inventory
- physical inventories
- processed
- purchase orders
- receiving records
- receiving sheets
- receiving stamp
- receiving tickets
- requisition
- shelf life
- standard
- standardized foods
- standards of identity
- trade or common name
- vendor
- wholesomeness
- written specifications

Food and supplies are essential to any foodservice operation. Both the foods used in preparing menu items and supplies used in food preparation and service, such as dishes, paper towels, and cloth napkins, must be replenished as they are used up. It is the purchaser's job to place orders, called ***purchase orders***, to obtain needed food and supplies. These orders are based on the needs of the establishment.

When the orders are delivered, they are carefully checked. The items are then stored properly to maintain their quality. As the items are needed, they are obtained from the storeroom either by a foodservice worker or by requesting the items from a storeroom worker.

The storeroom worker fills the request and removes the items from the list of food and supplies on hand. As supplies become low, this information is provided to the purchaser so that new orders may be placed.

## FORMS AND QUALITY OF FOOD

Food purchases are based on the menu, food budget, labor cost and skill of personnel, season, and availability of food. These factors influence the form of food and quality of food needed. Once these decisions are made, detailed description or written specifications for each food are written. Food orders are based on these specifications.

### *Forms of Food*

Foods come in a variety of forms. Many foods are purchased fresh. Fruits, vegetables, eggs, and meat may all be purchased fresh. Other foods have been ***processed***. These foods have undergone some treatment, or process, to keep them from spoiling. Processing also reduces the time needed for food preparation. Frozen, canned, dehydrated, freeze-dried, and dried foods have all been processed. Salting, pickling, and sweetening are other methods of processing used to prevent food spoilage. Fruits and vegetables are available in all of these forms. Milk is available in liquid, concentrated, or dried form. Meats may be fresh, smoked or cured, canned, or frozen.

Many convenience forms of foods are used in the foodservice industry. Convenience foods may be packaged as mixes, partially processed, or ready-to-serve. These foods help to reduce labor costs and ensure consistent quality in the foods served.

### *Food Quality*

Food in the United States must meet rigid standards of ***wholesomeness***. These standards ensure that the food is fit for humans to eat. All food shipped from one state to another must meet the standards established by the U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA). The Federal Trade Commission (FTC) and the Department of Health and Human Services (DHHS) are other federal government agencies that regulate food. State and local governments also have food regulations.

**Grading.** Besides standards of wholesomeness, the USDA also sets standards of quality for many foods. These standards are concerned with appearance, size, and texture of the product. The quality of a product is determined by grading. ***Grading*** classifies foods according to standards of quality from the most to the least desirable. Products graded by the USDA bear a special shield that is easily recognized. Foods are equally wholesome and nutritious regardless of their grade. Refer to Table 19.1 for food grades commonly used in the United States.

**Labeling.** By law, food product labels must provide certain information. The Federal Food, Drug, and Cosmetic Act and the Nutrition Labeling and Education Act require that all food labels show the following:

- the identity of the food by its common or usual name (for example, tomatoes or green beans). The word ***imitation*** must be

## Common U.S Grades

### Meats

| Food Product | Rated Superior | Rated Excellent | Rated Good |
|---|---|---|---|
| Beef | USDA Prime | USDA Choice | USDA Select |
| Veal | USDA Prime | USDA Choice | USDA Good |
| Lamb | USDA Prime | USDA Choice | USDA Good |

### Dairy Products

| Food Product | Rated Superior | Rated Excellent | Rated Good |
|---|---|---|---|
| Butter | U.S. Grade AA | U.S. Grade A | U.S. Grade B |
| Cheddar Cheese | U.S. Grade AAA | U.S. Grade A | U.S. Grade B |
| Swiss Cheese | U.S. Grade A | U.S. Grade B | U.S. Grade C |
| Nonfat Dry Milk | U.S. Extra Grade | U.S. Standard Grade | |
| Cottage Cheese | No Grades - May be marked USDA Quality Approved | | |

### Poultry and Eggs

| Food Product | Rated Superior | Rated Excellent | Rated Good |
|---|---|---|---|
| Poultry | U.S. Grade A | U.S. Grade B | U.S. Grade C |
| Eggs | U.S. Grade AA Fresh Fancy Quality | U.S. Grade A | U.S. Grade B |

### Processed Fruits and Vegetables and Related Products

| Food Product | Rated Superior | Rated Excellent | Rated Good |
|---|---|---|---|
| Fruits, Vegetables, and Related Products | U.S. Grade A Fancy | U.S. Grade Choice or Extra Standard | U.S. Grade C Standard |

⇨ *Table 19.1*

used on a label when the product is not as nutritious as the one it resembles or for which it is a substitute. "Imitation mayonnaise" is an example. If the product is similar to an existing one and is just as nutritious, a new name can be given. Egg substitutes are an example.

- the form of the food, unless it can be clearly seen. This might include the variety, such as cling or freestone peaches; the style of pack or form, whole, sliced, or diced; and the material in which the food is packed, water, syrup, juice, or oil.
- the name and address of the manufacturer, packer, or distributor.
- the net contents or net weight of the product.
- the ingredients listed in order of quantity beginning with the largest amount. See the example of an ingredient label for chocolate chip cookies in Figure 19.1. A list of ingredients is not required on standardized foods. ***Standardized foods*** must meet the FDA ***standards of identity***, composition, and standards for commonly used products. Examples of standardized foods include mayonnaise, ketchup, peanut butter, and ice cream.
- any artificial coloring and chemical preservatives used must be listed whenever used.

***Nutrition labeling***, which is the information about the packaged food, is also required. In 1993, new mandates were introduced for labels on foods. The labels, titled "Nutrition Facts," were first introduced by the USDA and the Department of Health and Human Services in January of 1993 and went into effect in May of 1993. These labels had to be in effect by May of 1994. The labeling regulations expanded on mandatory nutrition labeling, defined reference amounts, provided a new label format, required a standard list of nutrients, and required more informative ingredient labels. Also, standard definitions were established which include the following:

- High - contains 20 percent or more of the total daily recommended nutritional component.
- Low Fat - contains three grams or less of fat per serving.
- Fat Free - contains less than 0.5 grams of fat per serving.
- Light (Lite) - 1/3 less calories or more than 1/2 the fat of the higher-calorie, higher-fat version, or no more than 1/2 the sodium of the higher-sodium version.
- Cholesterol Free - contains less than 2 milligrams of cholesterol and 2 grams (for less) of saturated fat per serving.
- Good Source of - contains 10-19 percent of the recommended daily value per serving.
- Reduced/Less Fat - contains reduced fat content of 25 percent or more.
- More/Added/Enriched - contains 10 percent or more of the nutrient than the recommended daily value of one serving of the original.
- Lean - meat or poultry products with less than 10 grams of fat, 4 grams of saturated fat, and less than 95 milligrams of cholesterol per 100 grams per serving.
- Extra-lean - meat or poultry products with less than 5 grams of fat, less than 2 grams of saturated fat, and less than 95 milligrams of cholesterol per 100 grams per serving.

**Ingredient Label for Chocolate Chip Cookies**

**INGREDIENTS:** ENRICHED WHEAT FLOUR (CONTAINS NIACIN, REDUCED IRON, THIAMINE MONONTRATE [VITAMIN B1], RIBOFLAVIN [VITAMIN B2], FOLIC), SEMISWEET CHOCOLATE CHIPS (SUGAR, CHOCOLATE, COCOA BUTTER, DEXTROSE, SOY LECITHIN - AN EMULSIFIER, VANILLIN - AN ARTIFICIAL FLAVOR), SUGAR, VEGETABLE SHORTENING (PARTIALLY HYDROGENATED SOYBEAN OIL), COCOA (PROCESSED WITH ALKALI), LEAVENING (BAKING SODA, SODIUM ALUMINIUM PHOSPHATE, ALUMINIUM SULFATE), MILK (ENZYME MODIFIED), FRUCTOSE, EMULSIFIERS (DATEM, VEGETABLE MONOGLYCERIDES), SALT, VANILLIN - AN ARTIFICIAL FLAVOR, PEANUT FLOUR.

***Figure 19.1***

To make health claims about the prevention of heart disease and fats, the food product must be low in fat, saturated fat, and cholesterol. To make health claims about blood pressure and sodium, the food must be low in sodium. To make health claims, the food must be a fruit, vegetable, or grain product low in fat, low in saturated fat, low in cholesterol, and contain 0.6 grams of soluble fiber per serving.

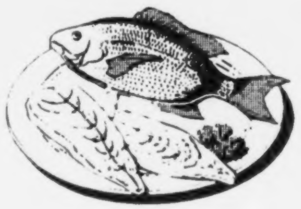
The purpose of the food labels is to provide consumers with advantages such as the following:

- ease in making informed food choices
- ease in comparing the nutritional values of similar food products
- ease in planning meals within dietary guidelines

All food products, with some exceptions, were required to carry a nutrition label similar to the one illustrated in Table 19.2 by the fall of 1994. The nutrition facts labels include information, such as serving size, calories per serving, total fat, saturated fat, cholesterol, sodium, total carbohydrates, dietary fiber, protein, vitamins and minerals, and percent daily value.

***Percent daily value***, as shown in the far right column of the nutrition fact label, is based on current nutrition recommendations for a 2,000 calorie reference diet. The percent figure is used to determine and compare the amount that a particular nutrient contributes on a daily basis toward the 2,000 calorie reference diet.

Food products that are exempt from disclosing nutritional facts include raw, single ingredient meat and poultry products, as well as most varieties of fresh fish, fruits, and vegetables. Products served in restaurants, products in small packages (less than 1/2 ounce – unless making a nutritional claim), products produced and packaged at retail, and products produced by small businesses are also exempt from disclosing nutritional facts.



Individuals on special diets recommended by their doctors can use the information from nutrition facts labels to help avoid restricted foods such as sodium. The ingredients in the food products are listed largest amount first, followed by the other ingredients in decreasing order of amount. They must be easy to read and not misleading.

**◆ *Essential Questions:* ◆**
***Forms and Quality of Food***

1. What agencies are responsible for regulating food?
2. What information is required by law on food product labels?

## FOOD SPECIFICATIONS

***Written specifications***, detailed descriptions or instructions, are used in ordering food and for the foodservice establishment. These specifications tell the **vendor**, or seller of the product, what is wanted. They spell out the standards of the foodservice facility. Each ***standard*** identifies the quality required in a specific product. Standards for food and supplies vary from one restaurant or institution to another. Some chain restaurants follow standards that are set as recipes developed in their test kitchens.

# Nutrition Facts

Serving Size 1/2 cup (114g)
Servings Per Container 4

**Amount Per Serving**
**Calories** 90 Calories from Fat 30

| | **% Daily value*** |
|---|---|
| **Total Fat** 3g | **5%** |
| Saturated Fat | **0%** |
| **Cholesterol** 0mg | **0%** |
| **Sodium** 300mg | **13%** |
| **Total Carbohydrate** 13g | **4%** |
| Dietary Fiber 3g | **12%** |
| Sugars 3g | |
| **Protein** 3g | |

| | | | | |
|---|---|---|---|---|
| Vitamin A | 80% | • | Vitamin C | 60% |
| Calcium | 4% | • | Iron | 4% |

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

| | Calories | 2,000 | 2,500 |
|---|---|---|---|
| Total Fat | Less than | 65g | 80g |
| Saturated Fat | Less than | 20g | 25g |
| Cholesterol | Less than | 300mg | 300mg |
| Sodium | Less than | 2,400mg | 2,400mg |
| Total Carbohydrate | | 300g | 375g |
| Dietary Fiber | | 25g | 30g |

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*Table 19.2*

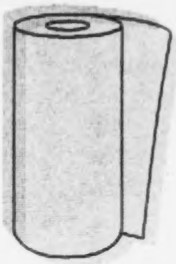
Specifications for food and supplies usually include the following:

- the ***trade*** or ***common name*** of the product – examples: chicken, homogenized milk, and apricots.
- the amount to be purchased – examples: case, pound, and carton.
- the brand or quality desired – examples: Libby and U.S. Grade A.
- a description of the product, including color, size, texture, cut, style, and pack – examples: Florida oranges, delicious apples, shortcut green beans, cream-style corn, 4-oz. veal cutlet, light syrup pack, No. 10 cans, aged beef, sliced peaches, rib roast with 1/2-inch fat, pure vanilla, and unsweetened pineapple juice.
- the sanitation standards required – examples: U.S. inspected, hard frozen, and interior temperature 40°F.
- the unit on which prices are to be quoted – examples: 6 No. 10 cans per case, four 1-gal. jars, per pound, and per dozen.

Both the person placing the order and the person receiving and inspecting deliveries must know the purchasing specifications of the establishment.

## TYPES OF SUPPLIES

A foodservice facility requires many things other than food to operate. Dishes, flatware, and glassware may be broken or lost. Tabletop items, such as candles and salt and pepper shakers, are consumable items or they can become unsightly. Tablecloths, napkins, and uniforms become worn and stained. These items must be replaced periodically. Most establishments use some disposables, such as containers for food, paper bags, paper napkins, drinking straws, paper towels, and toilet tissue. Cleaning supplies are needed for dishwashing and general cleaning.



The exact items needed vary from one foodservice establishment to another. However, the procedures for purchasing these items are similar to the procedures used for purchasing food. Exact specifications are needed so that prices may be compared and a supplier selected. Most supplies need to be replenished regularly.

**◆ Essential Questions: ◆**
**Food Specifications and Types of Supplies**

1. What information do food and supply specifications usually include?
2. What supplies are used in foodservice facilities?

## RECEIVING FOOD AND SUPPLIES

Good purchasing practices are of little value if the food and supplies are not checked carefully when received. In the usual method of receiving, the receiving clerk receives duplicate purchase orders which list the goods ordered. All items should be checked to make sure that what was ordered is received. No ***invoice*** or delivery slip should be received without checking what is delivered. Checking an order should include the following:

- Items Delivered – Are they what was ordered? Do they meet specifications?

- Quantity – Does the amount delivered match the amount ordered? Is the quantity indicated on the invoice correct?
- Price – Was the price quoted or bid what was charged? Are multiplications and additions correct?
- Quality – Are the items in good condition? Are frozen foods frozen, refrigerated items cold, items fresh according to date, packages or containers clean and undamaged?

Some establishments use a method called ***blind receiving***. In this method, the receiving clerk receives no information about what has been ordered. Vendors omit prices and quantities from their delivery tickets. The receiving clerk must count or weigh every item delivered and make an appropriate entry on the receiving record. This method forces the receiving clerk to count or weigh each item, not just to copy the information from the invoice or delivery ticket.

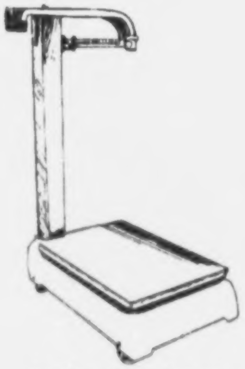
Methods of receiving vary from one foodservice operation to another. The important thing to remember is that food and supplies should be received and checked in an efficient and orderly manner.

The best time to correct errors in deliveries is while the delivery person is still there. Then a credit memo can be written, unwanted damaged merchandise can be returned, and indications can be made on the invoice before the manager signs or before the delivery report is completed.

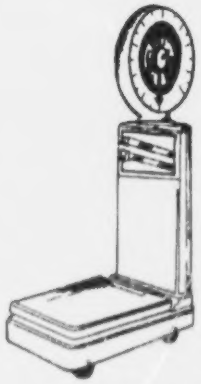
## Checking Quantity

Food purchased by weight should be weighed when it is received, since weight shortages in quantity purchases are costly. Money is lost if an order is short by even a few ounces.

Automatic indication-type or beam-type scales are used in the receiving area for accurate weighing.



indication-type



beam-type

Each different item should be weighed separately. Remember the weight of the packaging should not be counted as part of the weight. Even if the total weight agrees with the total shown on the delivery ticket, some items may be short and some over in weight. Items vary in price. A weight shortage in a high-priced item cannot be made up by receiving more of a less expensive item.

Items not purchased by weight should be counted accurately to make sure that all items have been received as shown on the delivery slip from the vendor. Any error in count should be called to the attention of the person in charge of the receiving area so that proper procedures can be followed.

## Checking Quality

Losses can occur even when the correct quantity of goods is received if the goods are of the wrong quality. To meet quality standards, the goods delivered should be the right grade, style, pack, and fill. They should be fresh. They should have been cared for properly. If there is any question about the quality of goods delivered, the person responsible for checking quality should be called.

To inspect fresh fruits and vegetables, randomly check several from the crate. Be sure to check also those in the center and bottom of the crate.

Check the temperature of highly perishable and chilled foods, such as milk, poultry, and all frozen items. Observe all frozen foods for signs of past thawing and refreezing, such as ice in the bottom of containers or signs of freezer burn. Learn dating codes on perishable foods and check whether fresh items are being delivered. ***Perishable foods*** are those which spoil quickly.

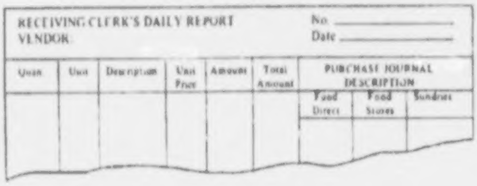
Check labels of canned foods to be sure the goods delivered are of the size and quality ordered. Check the style, pack, size, and fill against what was ordered. The ***style*** is the cut of the product. The style could vary, such as whole, chunk, flaked, pieces, short cuts, and puree. The ***pack*** is the medium in which the food is canned. The medium could be water, oil, oil and vinegar, light syrup, heavy syrup, or natural juice. The ***fill*** is the weight of the contents. Most canned products are packaged by weight, not by volume.

Workers responsible for inspecting incoming food and supplies should be able to identify damaged, contaminated, and spoiled products. Refer to Table 19.3 for guidelines to receiving, inspecting, and storing food.

## Receiving Records and Forms

***Receiving records*** are used to maintain a daily record of food and supplies received by the establishment. The principle ways of keeping these records are receiving sheets, individual receiving tickets, and receiving stamps. In small establishments, the receipt of food and supplies may be recorded in a ledger.

***Receiving sheets*** contain the following information: the vendor's name, the date, a description of items received, and the quantity received. The description of the item usually includes the brand name, grade, style, and other identifying information. The quantity is designated by count, weight, and size. In some instances, the unit, total cost of items, and the order number also are recorded. Receiving records are usually made out in duplicate. One copy is kept by the receiving clerk and one is sent to the accounting department. A sample receiving record is shown in Figure 19.2.



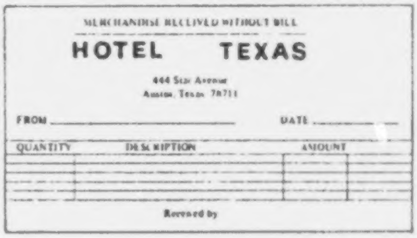
RECEIVING CLERK'S DAILY REPORT
VENDOR:

No. ____________
Date ____________

| Quan | Unit | Description | Unit Price | Amount | Total Amount | PURCHASE JOURNAL DESCRIPTION | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Food Direct | Food Stores | Sundries |
| | | | | | | | | |

Figure 19.2

***Receiving tickets*** are used when merchandise is received without accompanying invoices. The same information is included on the receiving ticket as on the receiving record. Receiving tickets are sent to the accounting department for use in checking against the purchase order and invoice. When the receiving ticket is used, a receiving record is not kept. A sample receiving ticket is shown in Figure 19.3.



MERCHANDISE RECEIVED WITHOUT BILL

HOTEL TEXAS

444 Star Avenue
Austin, Texas 78711

FROM ____________ DATE ____________

| QUANTITY | DESCRIPTION | AMOUNT | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Received by

Figure 19.3

When invoices, invoice duplicates, or vendor's delivery tickets accompany a delivery, they first should be stamped with a receiving stamp. The ***receiving stamp*** usually contains four check points as shown in Figure 19.4. The first checkpoint is receiving. After the delivery has been checked, the receiving stamp should be initialed and dated by the receiving clerk.

## Guidelines for Receiving, Inspecting, and Storing Food

| Food | | Guidelines |
|---|---|---|
| Meat (beef, veal, and lamb) | Color | • Brown, green, or purple blotches are signs of spoilage. Black, white, and green spots are signs of molds. |
| | Odor | • Except for aged beef, meat should never smell sour. |
| | Texture | • Unfrozen meat should be firm and elastic to the touch. No meat should be slimy, sticky, or dry to the touch. |
| | Temperature | • Unfrozen meat should be delivered at 40° F (4.4° C) or below. Frozen meat should be delivered below a temperature of 0° F (-17.7° C). |
| | Packaging | • Broken cartons, dirty meat wrappers, and torn vacuum packaging are all indicators of poor sanitary practices and possible contamination. |
| | Storage | • Store as soon as possible in refrigerator or freezer. Wrap raw meat loosely. Hang quarters and sides of beef uncovered on a clean, sanitary hook with nothing underneath. Store frozen meat in freezer in original wrapping. Be sure frozen meats are wrapped and sealed in moisture-proof paper or containers. Do not freeze processed meats like ham, bacon, and luncheon meat delivered unfrozen. |
| Poultry | Color | • Poultry with a purplish or greenish overall cast, and a greenish discoloration around the neck and vent should be rejected. Darkened wing tips are also a sign of spoilage. |
| | Odor | • An abnormal odor is a sign of spoilage. |
| | Texture | • Soft, flabby flesh usually means poor quality. Stickiness under the wings and around the joints are signs of spoilage. |
| | Temperature | • Same as meat. |
| | Packaging | • Same as meat. |
| | Storage | • Wrap whole birds loosely for refrigeration of up to three days. Refrigerate giblets and cooked, cut-up pieces of poultry no more than two days. Store frozen poultry in freezer in original wrapping. |
| Fruits and Vegetable | Color | • Color should be bright, not dull or discolored. |
| | Texture | • Pieces should be fully developed and show no outward signs of spoilage, such as bruises, decay, cuts, punctures, shriveling, wilting, leaking, or molding. |
| | Taste | • Taste is the best test of quality. |
| | Storage | • Refrigerate most fresh fruits and vegetables. Ripen apples, avocados, bananas, and pears at room temperature. To prevent mold, do not wash berries, cherries, and plums before refrigeration. Store citrus fruits at a cool room temperature. Store potatoes in ventilated containers in a cool, dry, dark place. Do not refrigerate sweet potatoes, mature onions, hard-rind squashes, eggplants, and rutabagas. |

⇨ ***Table 19.3***

## Guidelines for Receiving, Inspecting, and Storing Food, Cont'd.

| Food | | Guidelines |
|---|---|---|
| Seafood | Appearance<br>Odor<br>Odor | • Fresh fish have bright red, moist gills. The eyes are bulging and clear. The flesh and belly area are firm and elastic. In stale fish, the gill slits are gray or gray-green, and dry; the eyes are cloudy, red-bordered, and sunken; the flesh is soft and yielding. Look for parasites and diseases —tumors, abscesses, and cysts — in freshwater varieties. Fresh lobster and other shellfish should be alive on delivery. Reject shellfish that give off a strong odor. Frozen fish should show no signs that it has been thawed and refrozen. Refrozen fish will have a soft, flabby flesh, a sour odor, and an off-color. Refrozen fillets may have a brown coloring at the edges. The wrapping paper will be moist, slimy, and discolored. The packaging may be deformed by internal pressure.<br>• Fish or shellfish with an ammonia odor are deteriorating and should be rejected.<br>• Refrigerate and cover fresh fish with crushed ice for storage up to three days. Wrap fish to prevent waterlogging. Uniced fish should be used within twenty-four hours. Store frozen fish in freezer in original wrapping. |
| Eggs | Age<br>Appearance<br>Freshness<br>Storage | • Fresh eggs should not be more than thirty days old.<br>• The shells should not be cracked, checked, or dirty.<br>• When broken open, the white should cling to the yolk. The yolk should be firm and not break easily. In a very fresh egg of top quality, the white will stand up well on its own. Frozen or dehydrated eggs should have been pasteurized.<br>• Refrigerate fresh eggs. Never wash eggs before refrigeration. Powdered dry eggs are semi-perishable. Refrigerate reconstituted eggs. |
| Dairy Products | | |
| Milk, Butter, and Cheese | Expiration Date | • Milk delivered after the expiration date marked on the container should be rejected.<br>Milk whose temperature is above 40° F on delivery should be rejected.<br>Fresh, clean milk has a sweetish taste. Sour, bitter, or off-tasting milk should be rejected.<br>Butter should have a uniform color. It should be free of mold, specks, and other substances.<br>Butter which is rancid, or which has absorbed foreign odors should be rejected.<br>Butter should have a firm texture.<br>Butter should have a sweet, fresh flavor.<br>Butter should be received in clean, unbroken containers.<br>Cheese should have uniform color. Cheese that is dried out or has uncharacterisitic mold should be rejected. If the cheese has a rind, the rind should be clean and unbroken.<br>The texture should be characteristic of the type cheese.<br>Flavor should be characteristic of the type cheese.<br>Keep dairy products tightly covered. Store away from sources of strong odors, such as fish, peaches, onions, or cabbage.<br>Use cottage cheese within three days, milk and cream within five to seven days after the date marked on the carton. |

➥ *Table 19.3 - cont'd.*

## Guidelines for Receiving, Inspecting, and Storing Food, Cont'd.

| Food | | Guidelines |
|---|---|---|
| Frozen Foods | Appearance | • Frozen foods should not show signs of thawing and refreezing. There should be no fluid or frozen liquids in the food carton or ice crystals on the product itself. |
| | Temperature | • The temperature of frozen foods should not be above 0°F. Ice cream, however, may be delivered and stored at a temperature of 6 to 10°F. To check temperature, insert a clean and sanitized stainless steel thermometer under the top layer of goods inside the package or through a hole punched in the unopened case. Leave the thermometer in place for 5 minutes. |
| | Storage | • Store food promptly after delivery. Store in original carton or repackage if carton is broken or space is not available for carton. |
| Canned Foods | Cans | • Check cans for swelled tops or bottoms, leakage, improper sealing at top or side, penetrating rust and dents, and dents along the side seams of the can which make it impossible to open with a manual can opener. Also, beware of pinholes, empty the contents and hold the can up to strong light. |
| | Contents | • Discard any food that appears abnormal in odor, color, or texture. Discard foods that are foamy or that have a milky-colored liquid. Do not taste-test such foods. |
| | Storage | • Store canned goods on shelves in dry storage area. Maintain temperatures of 50-70°F. Use first-in, first-out method of storage. |
| Dry Foods | Containers | • Cartons should be dry and undamaged. Reject foods in damaged containers. |
| | Color | • Be sure color is standard for product. |
| | Odor | • Reject products with odors that are not standard for the product. |
| | Insects | • Check for tiny insects or insects eggs in cereal or flour by sprinkling a bit of the product on brown paper. |
| | Storage | • Store dry food in air tight containers on shelves in dry storage area. Maintain temperatures of 50-70° F. Rotate dry foods using the first-in, first-out method. |

➡ *Table 19.3 - cont'd.*

**RECEIVED BY. . . . . . . . .DATE. . . . . . . .**
**PRICES & EXTENSION CHECKED BY. . . . .**
**DEPARTMENT HEAD APPROVAL. . . . . . . .**
**PAYMENT APPROVAL. . . . . . . . . . . . . . . . .**

*Figure 19.4*

## STORAGE OF FOOD AND SUPPLIES

Improperly stored food is a potential source of contamination and spoilage. Different kinds of food have different storage requirements. However, all food should be kept in areas that are clean and used only for storing food.

### Marking Merchandise Received

Perishable merchandise should be marked or tagged as it is received. The following information should be recorded on the tag or marked on the side of the case or package:

- Date of receipt
- Name of vendor
- Description of merchandise
- Weight or count when received

The unit price and total price may also be included on the tag.

Marking is done for several reasons. Marking gives a weight or count which can be checked at a later time for accuracy of the original receipt. It aids in using items in the order they were received. It also eliminates the need to weigh or count items still in the original package before issuing them to the kitchen.

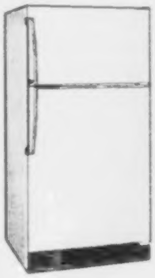
Foods should be used on a ***first-in, first-out (FI-FO)*** basis. This means that foods purchased first should be used first. Most foodservice establishments use a system to ensure that this rule is observed. The most common system is dating goods upon receipt and placing new deliveries in the rear of storage areas.

To be kept clean, most foods should be wrapped in material that is moisture-proof and airtight. All wrappers or containers used for storing food should be clean. Any carts used in transporting food to and from storage areas should be kept clean and should not be used for other purposes, such as transporting garbage.

The three major storage areas in the foodservice establishment are refrigerated storage, freezer storage, and dry storage. Each storage area has its own sanitation requirements.

### Refrigerator Storage

Refrigeration is used for short-term holding of perishable items. Refrigeration slows growth of bacteria in foods, but does not destroy bacteria already present in food.



Meat, fish, and dairy products require the lowest refrigeration temperatures. Fruits and vegetables need higher temperatures. If one refrigeration unit is used for more than one kind of food, the colder spots should be identified and used for foods requiring the lowest temperatures. If separate refrigerators are used, each can be set to a temperature suitable for the foods stored there. The temperature and humidity requirements of foods that must be refrigerated are in Table 19.4.

Reach-in, roll-in, and under-the-counter refrigerators are some of the types used in foodservice establishments. A close watch should be kept on the temperature of all refrigerators. Units not equipped with a thermometer should have one placed in the warmest part of the refrigerator. Thermometers should be checked regularly for accuracy.

## The Temperature and Humidity Requirements of Refrigerated Foods

| Food | Temperature | Relative Humidity % |
|---|---|---|
| Meat and Poultry | 32 to 36°F (0 to 2.2° C) | 75 to 85 |
| Fish | 30 to 34°F (-1.1 to 1.1° C) | 75 to 85 |
| Dairy Products | 38 to 40°F (3.3 to 4.4° C) | 75 to 85 |
| Most Fruits and Vegetables | 40 to 45°F (4.4 to 7.2° C) | 85 to 95 |

*Table 19.4*

Refrigerators should be cleaned and defrosted regularly. Shelves should be removed and cleaned. All interior surfaces should be cleaned thoroughly.

For safe and efficient refrigerator operation, observe the following guidelines:

- Do not overfill refrigerators. Overfilling makes cleaning difficult and may prevent air circulation necessary for maintaining proper temperatures.
- Store all foods in clean, nonabsorbent, covered containers or in their original package.
- Space containers to ensure air circulation.
- Avoid lining shelves as it interferes with air circulation.
- In walk-ins, store food away from walls and off floors to prevent contamination from insects, rodents, cleaning solutions, and spillage.
- Avoid adding large amounts of warmer foods to the refrigerator at once. Divide large amounts of food into small containers and shallow pans to ensure thorough quick cooling, stirring periodically if necessary.
- Open a refrigerator only after identifying products needed, not before. Make as few trips to the refrigerator as possible.

### Freezer Storage

Most freezers used in foodservice establishments are designed *only* for storing already-frozen foods. Freezers capable of processing unfrozen foods must be capable of producing temperatures below -20°F. These freezers are called ***blast freezers*** or ***plate freezers***.

Freezers are useful for long-term storage of many perishable foods. However, lengthy freezer storage increases opportunities for contamination and spoilage. In addition, many frozen foods deteriorate rapidly. Items that deteriorate in freezer storage include hamburger, fatty fish, turkey, pork, creamed foods, custards, gravies, sauces, and puddings.

For safe and efficient freezer operation, use the following guidelines:

- Maintain an air temperature between -10 and 0°F (-23.3 and -17.7°C).

- Use one or more easily visible thermometers or other mechanisms to record freezer temperature and to check for "hot" spots.
- Defrost upright freezers as often as recommended in operator's manual.
- Store frozen foods promptly after delivery.
- Store frozen foods in moisture-proof material or containers.
- Store frozen-food products in the original cartons in which they were shipped. Repackage if carton is broken or space is not available for original cartons.
- Open freezer doors only when necessary and remove as many items as possible at once.
- Remove from storage only the quantities of frozen food that can be used immediately.
- Use frozen foods on a first-in, first-out (FI - FO) basis.

## Dry Storage

Dry storage areas should be well-ventilated, well lit, clean, and protected from pests and excessive moisture. Temperatures of 50° to 70°F should be maintained in dry storage areas. A temperature of 50°F increases the shelf life of many products. ***Shelf life*** refers to the length of time a product can be stored without serious change in quality. A thermometer should be used to check the temperature of the dry storage area regularly. A relative humidity of 50 to 60 percent is satisfactory for most foods in dry storage. A ***hygrometer*** may be used to check relative humidity. Adequate ventilation is necessary to maintain the quality of foods in dry storage and to prevent insect infestation.

The dry storage area must be swept and cleaned regularly. Walls, ceiling, floor, shelves, light fixtures, and racks should all be cleaned on a routine basis.

To ensure safety and sanitation in the dry storage area, the following four additional rules should be observed:

- Never store food directly on the floor.
- Never smoke in the dry storage area.
- Never keep garbage in the area where food is stored.
- Store heavy and bulky items on shelves or in bins closest to the floor.

## Storage Of Specific Foods

Procedures for storing specific foods are described in the chart on receiving, inspecting, and storing foods. However, Table 19.3 shows how long specific foods may be kept in the refrigerator, freezer, or dry storage area. The recommendations for maximum storage periods in refrigerators and freezers should be followed carefully. Dry goods keep longer, but eventually loose quality.

## Non-food Storage

Non-food items, especially cleaning products, should be stored separately from food products. Storage locations should be accessible to the areas where the items are used. Storage areas for non-food items should be kept clean and dry.

### ◆ Essential Questions: ◆
### Receiving and Storage of Food and Supplies

1. What checks should be made when receiving an order for food or supplies?
2. What are the procedures for checking the quantity of food and supplies delivered to the foodservice facility?
3. What is FI-FO? Explain.

## REQUISITIONING

In larger establishments, a receiving clerk or storeroom worker also may issue supplies to the various departments in the foodservice operation. ***Issuing*** refers to supplying each department with the items they request or ***requisition***. To obtain supplies, workers must complete a requisition, or written order, for needed supplies. The department head must sign the form before the order can be filled. The requisition, or " rec," is sent to the storeroom to be filled by the storeroom worker. Supplies should not be issued without a signed requisition. Issuing supplies without authorization can cost a storeroom worker his or her job.

When completing the requisition form, include the date and the department requesting the supplies. The name and grade of each item should be clearly stated. A requisition for three cans of beans is not clear. This could mean green beans, lima beans, pinto beans, or pork and beans. Three No. 10 cans of French-cut green beans is clearer. Therefore, it is important to state on the requisition form the size can and the grade of each item needed.

When the requisition reaches the storeroom, the storeroom worker assembles the order beginning with the least perishable items. Orders for staple items, such as flour, shortening, and baking powder, are filled immediately from supplies on hand. Special items that are not used too frequently may have to be ordered as they are needed for special recipes. Items requisitioned are delivered to the appropriate department.

### ◆ Essential Questions: ◆
### Storage and Requisitioning of Food and Supplies

1. What are the general guidelines for receiving, inspecting, and storing foods? Give examples of each.
2. What is the procedure for rotating food on a first-in, first-out (FI-FO) basis?
3. What are the procedures for requisitioning and issuing food and supplies in the foodservice establishment?

## SUPPLY INVENTORY

An ***inventory*** is an itemized list of food and supplies on hand. Most establishments serving food take ***physical inventories*** at the end of each week or month. To do this, all items on hand are counted and listed. A ***perpetual inventory*** record is used in some establishments. It shows how much food is used on a daily basis. An actual physical inventory is done less often.

To take an inventory, use inventory sheets which list items by storage location. Usually, two persons take an inventory. One person checks the shelves and calls out the items and amounts on hand. The other person records this information on the inventory sheets.

It is better to start at one end of the storage area and call out items in their order on the shelf rather than to look for items using the order listed on the inventory sheet. If the latter method is used, items are easily overlooked.

The inventory is used to determine what supplies need to be ordered. It can also be used to determine the cost of food used during the last week or month. This is done as follows:

- List the total cost of food on hand at the previous inventory period.
- Add the daily food purchases.
- Subtract the present inventory on hand.
- The answer is the overall cost of food used.

### ◆ Essential Questions: ◆
### Supply Inventory

1. What is the difference between a physical inventory and a perpetual inventory?
2. What information is included on an inventory?

## Chapter Highlights

- Foods come in a variety of forms. They may be fresh or processed. Processed foods include frozen, canned, dehydrated, freeze-dried, and dried foods. Other methods of processing are salting, pickling, and sweetening.

- Standards for wholesomeness are established by the U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA). The Federal Trade Commission (FTC), the Department of Health and Human Services(DHHS), and state and local agencies also regulate food.

- The quality of a food product is expressed by grades from most to least desirable. Foods are equally wholesome and nutritious regardless of their grade.

- Food product labels must show the identity of the food by its common or usual name; the form of the food (unless it can be clearly seen); the name and address of the manufacturer, packer, or distributor; the net contents or net weight of the product; the size of the servings (if the number of servings is stated); the ingredients in order of quantity beginning with the largest amount; and nutrition labeling.

- Written specifications are used in ordering food and supplies for the foodservice establishment. Specifications usually include the trade or common name of the product, the amount to be purchased, the brand or quality desired, a description of the product, the sanitation standards required, and the unit on which prices are to be quoted.

- Supplies used in a foodservice facility may include dishes, flatware, glassware, tabletop items, tablecloths and napkins, uniforms, paper products, and cleaning supplies.

- Orders received by the foodservice facility should be checked to be sure that the items delivered are what was ordered and that they meet the specifications requested, that the quantity ordered was actually delivered, that the price charged was the price quoted, and that the items are of acceptable quality and are in good condition.

- When the "blind receiving" method is used, the receiving clerk must count or weigh every item delivered and make an appropriate entry on the receiving record.

- Receiving records are used to maintain a daily record of food and supplies received by the establishment. The principle ways of keeping these records are receiving sheets, individual receiving tickets, and receiving stamps.

- Food should be used on a first-in, first-out (FI-FO) basis.

## Chapter Highlights, Cont'd.

- The three major storage areas in the foodservice establishment are refrigerated storage, freezer storage, and dry storage. Each storage area has its own sanitation requirements.

- An inventory is an itemized list of food and supplies on hand. Both physical inventories (actual counts of food and supplies on hand), and perpetual inventories, (written records of food and supplies delivered and issued) are used in foodservice facilities.

# Chapter 20

# Food Preparation Techniques

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

7H Implement appropriate work-simplification procedures when performing assigned tasks.

9A Utilize effective planning strategies for food production operations.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9F Follow standardized recipes utilized in food production.

9J Perform appropriate tasks in food production according to industry standards.

9K Apply available technology in food production.

## Chapter Vocabulary

as purchased
broth
combination cooking method
condiment
convenience food
dry heat
edible portion
extract
frying method
garnish
herbs
ingredients
liquid food extracts
moist heat
monosodium glutamate
portion
portion control
portioning
production schedule
recipes
sea salt
seasoned salt
seasonings
smoked salts
spices
standard portions
standardized recipes
stock
yield

Consistency in the appearance and taste of food is a goal toward which every foodservice establishment should strive. To reach this goal, the food buyer carefully orders according to purchasing standards, and food preparation personnel help by carefully following standardized recipes. This means using standard weights and measures; appropriate equipment, tools, and utensils; and correct methods of preparation. Foodservice personnel contribute to the goal of consistency by accurately portioning and attractively garnishing foods.

## STANDARDIZED RECIPES

***Recipes*** are formulas for producing a specific food dish. Just as a chemist carefully follows a formula to make a compound, a cook must carefully follow a recipe to make a food product. ***Standardized recipes*** are the instructions for preparing certain foods that are served in a foodservice establishment and are therefore a must if the results are always to be of the same quality. Standardized recipes help maintain quality and cost control in quantity food production. Some foodservice establishments develop and test, which is standardizing, their own recipes. Others use standardized recipes from quantity cookbooks. Standardized recipes include the following information:

- amount of ingredients, by weight or volume, in order of use
- type and size of utensils and tools to be used
- clear directions about how to combine ingredients
- cooking methods, temperatures, and time
- weight or volume to be placed in a specific container
- size of servings, including type and size portioning device
- number of servings or portions per pan, quart, or gallon
- yield in cups, quarts, or gallons
- terms which are familiar to most cooks

***Ingredients*** are the foods used to prepare a recipe. Food preparation personnel must be familiar with many types of ingredients. Standardized recipes specify whether ingredients are to be measured by weight or volume. Weighing ingredients is the quickest, easiest, and most accurate way to measure large quantities. This method is almost always used in foodservice. However, smaller amounts may be measured by volume. Volume measurements include cans, cups, tablespoons, teaspoons, and fractions of teaspoons.

Standardized recipes specify the types of utensils and tools to be used in preparing ingredients. Recipes for baked products usually specify the pan size to be used.

Food preparation methods are specified as needed in standardized recipes. Food preparation workers must know and understand a variety of food preparation terms. Most recipes indicate specific temperatures for cooking foods. If the temperature used is too low, the food will be undercooked. If it is too high, the food will be overcooked, dry, or burned. For cooking on top of the range, temperatures are usually specified as boiling, low, or simmer. If more exact temperatures are specified, a thermometer or thermostat must be used. The length of cooking time must be observed to ensure a standard product.

Standardized recipes also specify the means for controlling portion size. ***Portion*** is another word for serving size. Portions may be controlled by weighing foods on a portion scale, by measuring volume with a ladle scoop, by measuring length and width, or by using a specific size container. Refer to Table 20.1 for an example of a standardized recipe.

### ***Abbreviations***

Abbreviations are used to save time and space in writing recipes. Ability to use quantity recipes is dependent on knowledge of

## Example of a Standardized Recipe

Potato Refrigerator Rolls Yield: 9-10 doz. rolls

| Ingredients | Amount | Preparation Procedure |
|---|---|---|
| Potatoes, Mashed | 1 cup | 1. Peel 2 medium potatoes and cut into several pieces.<br>2. Boil in small amount of water until soft.<br>3. Drain and mash until smooth.<br>4. Cool until lukewarm. |
| Yeast, Active Dry<br>Sugar, Granulated | 1 pkg.<br>2/3 cup | 5. Place yeast and sugar in a bowl.<br>6. Add warm water (not hot) and mix. |
| Water, Warm | 1 1/2 cups | 7. Let stand 10 minutes. |
| Salt<br>Shortening (part butter or margarine makes a particularly rich product)<br>Eggs | 1 1/2 tsp.<br>2/3 cup<br>2 | 8. Add salt, shortening, two eggs and lukewarm mashed potatoes to yeast/water mixture and stir together. |
| Flour, Sifted | 7-7 1/2 cups | 9. Mix in flour until dough is easy to handle.<br>10. Turn onto lightly floured board.<br>11. Knead until smooth and elastic.<br>12. Place in greased bowl.<br>13. Turn dough so top is greased.<br>14. Cover with greased wax paper or plastic wrap and damp cloth.<br>15. Let rise until double in size (approximately 1 1/2 hour).<br>16. Punch down, cover, and refrigerate.<br>17. Shape into rolls. (Use 1/2 oz. raw dough for petite rolls.)<br>18. Place 1-2 inches apart on greased baking sheet.<br>19. Cover and let rise until double in size (1 and 1/2-2 hours).<br>20. Bake 12-15 minutes.<br>21. Remove from pan immediately and apply desired topping. |

NOTES: Instant mashed potatoes or leftover potatoes may be used if desired. Be sure they are lukewarm, not hot, when added to the recipe. If desired, rolls may be baked the day before and reheated at serving time. Do not place topping on rolls until they are ready to serve.

SERVING INFORMATION: Serve warm.

*⇨Table 20.1*

## Abbreviations Used in Food Preparation

| | |
|---|---|
| approximately = | approx. |
| average = | av. or avg. |
| bunch = | bch. |
| bushel = | bu. |
| calorie = | Cal. or Kcal. |
| centimeter = | cm. |
| cup = | c. |
| cylinder = | cyl. |
| deciliter = | dl. |
| degrees Centigrade = | °C |
| degrees Fahrenheit = | °F |
| dozen = | doz. |
| few grains = | f.g. |
| fluid = | fl. |
| gallon = | gal. |
| gram = | gm. |
| hectogram = | hg. |
| hour = | hr. |
| kilogram = | kg. |
| large = | lg. or lge. |
| liter = | l. |

| | |
|---|---|
| milligram = | mg. |
| milliliter = | ml. |
| minute = | min. |
| monosodium glutamate = | M.S.G. |
| ounce = | oz. |
| peck = | pk. |
| pint = | pt. |
| package = | pkg. |
| pound = | lb. or # |
| quart = | qt. |
| second = | sec. |
| small = | S., sm., or sml. |
| speck = | spk. |
| square = | sq. |
| tablespoon = | T., tb., or tbsp. |
| teaspoon = | t., ts., or tsp. |
| temperature = | temp. |
| weight = | wt. |

Table 20.2

commonly used abbreviations. Abbreviations commonly used in food preparation are given in Table 20.2.

Two additional abbreviations found in quantity food recipes include the following:

- ***as purchased*** *(A.P.)* – This means that the weight or measure should be taken without any preparation of the food. Examples include unsifted flour, whole lettuce, and unshelled eggs.
- ***edible portion*** *(E.P.)* – This means that only part of the food normally eaten or used in cooking is being considered. Examples include peanuts after being shelled and eggs out of shell. Recipes generally specify any preparation an ingredient needs before it is used, such as sift, chop, or mince.

## Substitutions

Foodservice and dietary employees should become familiar with the substitutions commonly used in recipes. Substitutions are made to reduce food cost, to save time, to increase food value, or to make use of surplus commodities. However, no substitutions should be made unless the supervisor says to do so. Standard substitutions are listed in Table 20.3.

## Equivalents

The successful use of a recipe depends largely upon accuracy in measuring the ingredients. To be able to measure accurately, one should become familiar with the commonly used equivalents listed in Table 20.4.

## Can Sizes

When can sizes are used in recipes, it is important to use the correct size can or to make the appropriate substitution. A list of common can sizes and their yields are listed in Table 20.5.

## Terminology

To be successful in quantity food preparation, foodservice and dietary employees must be able to understand terminology used in standard recipes. They must master certain food preparation terminology as well. Knowledge of food preparation terms provides a basis for interpreting directions used in recipes for beverages, meats, salads, vegetables, fruits, desserts, and pastries. Some terms are related to dishes native to other countries which have become popular in the United States. Other terms are of French origin. All foodservice employees should be alert to new food preparation terms. For those who aspire to become gourmet chefs, knowledge of the French language is a must.

## Adjusting Yield

***Yield*** refers to the number of servings a recipe provides. Most standardized recipes for foodservice will yield 25, 50, or more servings. The yield of a recipe is usually stated on the recipe card.

To get a different number of servings than the recipe makes, one must adjust the recipe. To do this, each ingredient must be increased or decreased by the same proportion one wishes to increase or decrease the recipe. For example, if a recipe yields 50 servings, but one only wants to serve 20 persons, the recipe must be decreased. To determine the amount to decrease each ingredient, one should divide 20 (the number of persons to be served) by 50 (the number of servings in the original recipe.) The result is .40 or 40 percent. If one wanted to use the recipe yielding 50 servings to serve 70 persons, the recipe would need to be increased. To determine the amount to increase each ingredient, 70 should be divided by 50. The result is 1.40 or 140 percent.

Next, the new amount of each ingredient should be determined. To make figuring easier when using recipes whose measures are expressed in pounds, cups, and tablespoons, each measurement in the recipe is converted to the next smaller unit. This means convert pounds to ounces, cups to tablespoons, and tablespoons to teaspoons. This step is omitted if the recipe uses metric measures. Then, each

## Standard Substitutions

| | |
|---|---|
| 1 sq. chocolate = | 3 T. cocoa and 1 T. fat |
| 1 c. cake or pastry flour = | 7/8 c. all-purpose flour |
| 1 T. cornstarch = | 2 T. flour (for thickening) |
| 1 t. baking powder = | 1/4 t. soda and 1/2 t. cream of tartar |
| 1 c. milk = | 1/2 c. evaporated milk and 1/2 c. water or 1 c. reconstituted nonfat dry milk plus 2 t. fat |
| 1 c. sour milk or buttermilk = | 1 c. fresh milk plus 1 T. vinegar or lemon juice (let stand 5 minutes) |
| 1 c. sour milk and 1 t. soda in flour mixture = | 1 c. fresh milk plus 3 t. baking powder |
| 1 c. butter = | 1 c. regular margarine (not light or reduced fat) |
| 1 whole egg = | 2 egg yolks or 2 T. dried whole egg plus 2 1/2 T. water |
| 1 c. honey = | 1 to 1 1/4 c. sugar plus 1/4 c. liquid |

*Table 20.3*

## Commonly Used Equivalents

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3t. | = | 1T. | = | 15 ml. | 4 qt. | = | 1 gal. | = | 3.8 l. |
| 16 T. | = | 1c. | = | 240 ml. | 8 qt. | = | 1 pk. | = | 9 l. |
| 1 T. | = | 1/2 fl.oz | = | 15 ml. | 4 pk. | = | 1 bu. | = | 35 l. |
| 1 c. | = | 8 fl. oz. | = | 240 ml. | .16 oz. | = | 1 lb. | = | 454 gm. |
| 2 c. | = | 1 pt. | = | .480 l. | spk. | = | less than<br>1.8t. | = | .50 ml. |
| 1 pt. | = | 16 fl. oz. | = | .480 l. | | | | | |
| 2 pt. | = | 1 qt. | = | 0.95 l.<br>950 ml. | f.g. | = | less than<br>1/8 t. | = | .50 ml. |
| 2 pt. | = | 32 fl. oz. | = | 950 ml. | pinch | = | less than<br>1/8 t. | = | .50 ml. |

*Table 20.4*

### Common Can Sizes and Their Yields

| Can Size | Approximate Yield |
|---|---|
| 6 oz. | 3/4 cups |
| 8 oz. | 1 cup |
| No. 1 Picnic (10 1/2-12 oz.) | 1 1/4 cups |
| No. 2 Vacuum (12 oz.) | 1 1/2 cups |
| No. 300 (15 1/2 oz.) | 1 3/4 cups |
| No. 303 (15 oz.) | 2 cups |
| No. 2 (20 oz.) | 2 1/2 cups |
| No. 2 1/2 (29 oz.) | 3 1/2 cups |
| 32 oz. | 4 cups |
| No. 3 (46 oz.) | 5 3/4 cups |
| No. 10 (6 lb. 9 oz.) | 3 qt. |

*Table 20.5*

amount is multiplied by the amount of increase or decrease needed to get the desired yield.

To reduce or increase the yield of a recipe one should follow these four steps:

**STEP 1:** Determine the proportion required to the number of servings yielded by the original recipe.

For example, to reduce a recipe serving 50 to one serving 20, the desired servings (20) are divided by the original recipe's servings (50):

20 (number of servings desired) /
50 (original number of servings)
= .4 desired proportion

**STEP 2:** Convert each unit of measure to the next smaller unit.

For example, if the recipe in STEP 1 above called for 2 lbs. of flour, pounds should be reduced to ounces.

16 oz. (number of ounces in a pound) x 2 lbs. (number of pounds required to serve 50) = 32 oz. (number of ounces needed to serve 50)

**STEP 3:** Determine the amount of the ingredient needed for the new recipe using the proportion determined in STEP 1 above.

For example, using the example in STEPS 1 and 2, 32 oz. would be multiplied by .4 to yield the amount of flour needed to serve 20.

32 oz. (number of ounces in 2 lbs., STEP 2) x .4 (desired proportion, STEP 1 ) = 12.8 oz. (number of ounces needed to yield 20 servings)

**STEP 4:** Convert the new amount (STEP 3) of each ingredient back to its original unit of measure.

For example, 2 lbs. started as pounds, but STEP 3 converted it to ounces. To convert back to pounds, 12.8 oz. should be divided by 16 ounces (1 pound).

(produce from STEP 3) 12.8 oz./16 oz. (1 pound) = .8 lbs. (number of pounds needed to yield 20 servings)

In this example, if 2 lbs. of flour are needed in a recipe yielding 50 servings, .8 lbs. would be needed to yield 20 servings.

Example 2: To increase the recipe used in the previous example from 50 to 70 servings, the same four STEPs should be used.

STEP 1: 70/50 = 1.4
STEP 2: 16 oz. x 2 lbs. = 32 oz.
STEP 3: 32 oz. x 1.4 = 44.8 oz.
STEP 4: 44.8 oz. x 16 oz. = 2.67 lbs.

Metric measures are a little easier to work. STEPs 2 and 4 are eliminated. Only two STEPs are used.

For example, to reduce a recipe from 50 servings to 20 servings requires only two computations.

STEP 1: 20/40 = .4
STEP 2: .4 x .9 kg. (metric equivalent to 2 lbs.) = .36 kg.

In this example, if .9 kg. of flour is needed in a recipe yielding 50 servings, .36 kg. would be needed to yield 20 servings.

◆ ***Essential Questions:*** ◆
**Standardized Recipes**

1. What is a standardized recipe?
2. What is the procedure for adjusting the yield of a recipe?

## RECIPE USE

Food preparation workers can develop speed and accuracy in recipe use by observing the following guidelines:

- Read the recipe carefully before beginning.
- Be sure each term used is understood.
- Estimate the time required for preparation of the product and plan so that the product will be finished at the proper time.
- Assemble all the ingredients.
- Make substitutions in ingredients only when told to do so.
- Measure or weigh exactly.
- Get out the necessary tools, utensils, and equipment or suitable substitutes before beginning.
- Arrange ingredients, tools, utensils, and equipment in order of use.
- Make all necessary pre-preparations, such as preheating the oven, washing and chopping vegetables, or greasing pans.
- Follow the directions exactly as given for best results.
- When in doubt, ask. Never guess.

### Cooking Methods

Five categories of cooking are used in food preparation: dry heat, moist heat, fat, combination, and extraction. ***Dry heat*** is used in baking, roasting, and broiling. Cakes, pies, breads, and beans are baked. Meat is roasted. Broiling involves the use of an open fire. ***Moist heat*** cookery involves the cooking of foods in liquids. Boiling, steaming, poaching, and pressure cooking are types of moist-heat cookery. The ***frying method*** browns by sautéing or flip frying, pan frying, griddle frying, deep frying, or pressure deep frying. The ***combination cooking method*** involves exposing food to the first three methods of cookery in a sequence or together in the same pot. Combination methods include stewing, braising, pot roasting, and fricasseeing. The fifth category, ***liquid food extracts***, uses by-products of foods which have been simmered in liquids. These liquids are called broth or stock. ***Broth*** is the liquid from cooked foods such as boiled chicken or boiled beef. ***Stock*** is liquid extracted from meat, fish, and vegetable leftovers. Broths and stocks are used to make soups, sauces, and gravies.

## Seasonings

***Seasonings*** are flavor-adding ingredients. They add interest and variety. Because they are strong-flavored, only small amounts of most seasonings are needed. Salt and pepper are the best known seasonings. Seasonings include herbs, spices, salts, extracts, and condiments.

**Herbs.** ***Herbs*** are the leaves of certain plants used to season foods. Flavors of herbs can be recognized by smelling and tasting small amounts. Herbs most frequently used in food preparation include the following:

- basil (BAZ-il) leaves
- bay leaves
- celery leaves
- chervil (SHUR-vil) leaves
- chives
- cilantro
- marjoram (MAR-jor-am)
- oregano leaves
- parsley leaves
- peppermint leaves
- rosemary leaves
- sage leaves
- spearmint leaves
- tarragon leaves
- thyme (TIME) leaves

**Spices.** ***Spices*** are parts of plants, other than leaves, used to season foods. They can be from the seeds, stems, bark, fruits, and roots of certain plants. They are very pungent, aromatic, and flavorful. Spices may be used whole or ground. Spices used in food preparation include the following:

- allspice
- black pepper
- cardamom (CARD-uh-mum)
- cayenne pepper (ki-YEN)
- cinnamon
- clove
- cumin
- ginger
- mace
- nutmeg
- paprika (pap-REE-ka)
- peppercorn
- poppy seed
- tumeric
- white pepper

Refer to Table 20.6 for a list of possible herb and spice combinations for various food categories.

Several herb and spice mixtures are used in food preparations. The most common ones are chili powder, curry powder, and poultry seasoning.

**Salts.** Salt heightens the flavor of foods. It should be used sparingly in food preparation. Several types of salt are used in food preparation. Table salt is the most common type of salt. ***Sea salt***, a coarse natural salt, is sprinkled on pretzels, rolls, and breads before baking. ***Monosodium glutamate*** is used to intensify the flavor of foods, especially in Oriental cookery. ***Seasoned salt*** is a mixture of table salt, vegetable flavoring, spices, and monosodium glutamate. ***Smoked salts*** are

## Herbs and Spices Chart

| Herbs and Spices | Appetizers and Soups | Side Dishes | Main Dishes | Baked Goods and Desserts | Beverages, Sauces, and Condiments |
|---|---|---|---|---|---|
| Sweet Basil | Minestrone<br>Vegetable soup | Ratatouille<br>Vegetables | Pastas<br>Pizza | Herb Breads | Pasta Sauces |
| Bay Leaves | Beef Stocks<br>Split Pea Soup | Carrots<br>Tomatoes | Stews<br>Pot Roast | | Pasta Sauce<br>Mirepoix |
| Cinnamon | Pumpkin Soup | Applesauce<br>Sweet Potatoes | Greek Dishes<br>French Toast | Pies<br>Cookies | Mexican Coffee<br>Hot Cocoa |
| Cumin | Empanadas<br>Guacamole | Spanish Rice<br>Chili Beans | Chili<br>Fajitas | Seeded Breads | Marinades<br>Chutneys |
| Curry Powder | Tomato Soup<br>Pumpkin Soup | Cauliflower<br>Fruit Salad | Curries<br>Chicken Salad | | French Dressing |
| Dill | Cheese Dips<br>Split Pea Soup | Coleslaw<br>Peas | Fish<br>Egg Dishes | Herb Breads | Pickles<br>Yogurt Sauce |
| Garlic Powder | Soups<br>Dips | Vegetables<br>Caesar Salad | Stir-Fries<br>Teriyaki | Herb Breads | Marinades<br>Butters |
| Ginger | Wonton Soup | Fried Rice<br>Spiced Pears | Teriyaki<br>Stir-Fries | Gingerbread<br>Gingersnaps | Chutney<br>Marmalade |
| Oregano | Tortilla Soup<br>Minestrone | Zucchini<br>Broccoli | Chili<br>Pizza | Herb Breads | Salsa<br>Pasta Sauces |
| Peppercorns (Black) | Minestrone<br>Stocks | Vegetables<br>Salads | Meats<br>Sausages | Spice Cakes<br>Pfeffernuesse | Marinades<br>Sauces |
| Red Pepper | Guacamole<br>Gazpacho | Beans | Omelets<br>Szechuan | Cornbread<br>Corn Muffins | Pickles<br>Tomato Sauces |
| Rosemary | Soup<br>Stocks | Roasted<br>Potatoes | Meats<br>Stews | Herb Breads | Mirepoix |
| Sage | Minestrone | Stuffing<br>Corn | Chicken<br>Pork Chops | Focaccia | Salad Dressings<br>Pasta Sauces |
| Thyme | Bean Soups<br>Clam Chowder | Stuffings<br>Dumplings | Meat Loaf<br>Pot Pies | Herbs Breads | Mirepoix<br>Salad Dressings |

Adapted from: *A Study in Spice from Spice Islands Cooking School*, San Francisco, CA, (1999).

***Table 20.6***

flavored with hickory smoke or smoke from other scented woods.

**Extracts.** An ***extract*** is the concentrated flavor and aroma of an ingredient. Some extracts are preserved in alcohol. The most familiar extracts are vanilla, almond, lemon, orange, and peppermint.

**Condiments.** A ***condiment*** is a seasoning or relish. Familiar ones include mustard, ketchup, and steak sauce. Other condiments include prepared horseradish, chili sauce, seafood cocktail sauce, Worcestershire, and soy sauce. Condiments are used in cooking as well as at the table.

**Care and Storage.** Spices, herbs, and extracts should be purchased in small quantities. Light and warmth cause herbs and spices to lose color, fragrance, and flavor. Keep them tightly covered in a cool, dark room. Extracts should be stored in dark bottles.

## Tasting

Tasting foods is a means of quality control. Sauces, gravies, and vegetables can often be improved by adding more butter or margarine, salt, pepper, or other seasonings. In some restaurants, the cooks all line up to taste the food before the guests arrive. Each uses a tray of clean spoons and tastes each dish. A clean spoon should always be used for tasting. Two spoons should be used. One spoon is used to remove food sample from pot. The food is then transferred to the tasting spoon. The cooking spoon should never be used for tasting.

## Convenience Food

A ***convenience food*** is any partially prepared food product or ingredient which saves production time. Although convenience foods may cost more than traditionally prepared foods, their cost is often offset by savings in labor, equipment, and energy costs. In addition, food waste can be almost entirely eliminated. Another advantage is that portion sizes can be standardized and the cost per portion more accurately determined.

Convenience foods are available in several forms: fresh, frozen, freeze-dried, dehydrated, and canned. Convenience foods are available for hors d'oeuvres, entrées, soups, sauces, vegetables, fruits, salads, and desserts. They may be packaged in quantity or in portion-size disposable containers. Some convenience foods need only reheating before being served. Sausage, gelatins, instant potatoes, and packaged pudding mixes are commonly used convenience foods. Other examples of convenience foods are cake and other baked-product mixes, frozen entrées, soups, gravy and sauce bases, and packaged individual portions of condiments and beverages.

The number of convenience foods used varies widely. Some foodservice establishments use only convenience foods, eliminating most food preparation. Other foodservice operations use convenience foods to eliminate steps in preparing some foods or to reduce food costs. They do not eliminate food preparation entirely. Some large restaurants prepare their own convenience foods, especially mixes and foods which can be frozen. Large chain restaurants may prepare and distribute foods from a central commissary to individual restaurants.

Recommendations for handling convenience foods include:

- Use the same safe handling practices as utilized with fresh, raw ingredients.
- Check products as soon as they are received and follow appropriate storage procedures.
- Use proper storage techniques for frozen, refrigerator, and dry storage.

- Do not keep products longer than recommended.
- Rotate stock by the "first-in, first-out" rule.
- Use a tempering box to defrost frozen foods; avoid refreezing frozen items.
- Check package directions to determine the extent to which the product has been prepared.
- Use efficient methods to cook convenience foods, such as the microwave oven.
- Be creative in your use of convenience foods and make sure you are serving a quality product.

**◆ Essential Questions: ◆**
**Recipe Use**

1. What are the eight guidelines for using a recipe?
2. What are the five categories of cooking? Give examples of each.
3. Why are convenience foods used in commercial foodservice?

## WORK SIMPLIFICATION

Work simplification means doing a task in the easiest, simplest, and quickest way. Work simplification eliminates unnecessary steps and wasted motions. It also helps to prevent fatigue.

The efficiency of work in a foodservice facility is affected by several factors. These factors include arrangement of work stations and equipment, which is discussed in Chapter 17. Efficiency is also affected by time management and work motions.

### Time Management

Foodservice employees are usually provided with time schedules to let them know what is expected. The time schedule usually lists the tasks each employee is assigned for the day. The time normally required for each task and the time the task must be completed may also be included. Refer to Figure 20.1 for an example of a time schedule.

To help control costs, the head cook may be responsible for completing a ***production schedule*** to be turned in to the general manager after preparation is completed. The production schedule usually shows the amount of food prepared, the expected yield, the actual yield, the number of servings, and the amount left. If too much of any food has been prepared, the manager can request less next time the food is served. Refer to Figure 20.2 for an example of a production schedule.

The workers in each station work as a team, each worker with a definite job. In the bake station, one worker might be mixing pie dough, another rolling it, and a third making the filling. In the salad station, one worker might be cleaning and peeling vegetables and fruits, another might be preparing vegetable salads, and another might be making gelatin salads. The head cook is in charge of the station, but it takes all workers working cooperatively to prepare quality food on schedule.

Timing is essential in food preparation. Food produced in large quantities must be ready at serving time. Foods produced to order must be timed so that all items are ready at the same time. If service is delayed, if food is not served at the proper temperature, or if the food is not fresh, flavorful, and attractive, customers will be dissatisfied.

Workers are responsible for timing their own work to ensure customer satisfaction.

## Time Schedule

Time Schedule for Bake Station Date 10/31/84
Product Biscuits
Time of Serving 12 noon D. Jones, head cook

| Job | Time Needed | Time for Completion |
|---|---|---|
| Pre-preparation | 20 min. | 11:30 |
| Mix & cut biscuits | 10 min. | 11:40 |
| Preheat oven | 10 min. | 11:40 |
| Biscuits in oven | 12-15 min. | 11:55 |
| Service | 3-5 min. | 12:00 |

Figure 20.1

## Production Schedule

Station Bake Station
Biscuits
Workers B. Ray
E. MacDonald
R. Campbell
Manager D. Smith

| Number of Servings Prepared | Menu Item | Expected Yield | Actual Yield | Number Served | Amount Left Over |
|---|---|---|---|---|---|
| 25 persons | Biscuits | 48 | 44 | 25 | 14 |
| 25 persons | Baked Custard | 25 | 25 | 25 | 0 |

Figure 20.2

Each food takes a different amount of time to prepare. Not only must time be allowed for cooking, but for preparation and finishing. For example, timing for cake making should include time for assembling ingredients, utensils, tools, and equipment; measuring ingredients; preheating the oven; baking; cooling the cake; frosting; and cleanup.

Timing also involves scheduling the use of equipment. Two persons cannot use the food mixer at once. Two items requiring different baking temperatures cannot be baked in the same oven at the same time. A schedule can eliminate confusion over who will be using a particular piece of equipment at a given time.

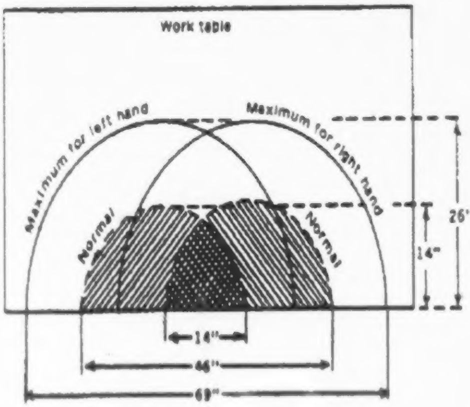
For the individual worker, the standardized recipe is an important aid in timing food preparation. It gives both a list of steps in preparation and the time required for cooking. By working back from serving time, the worker can estimate the amount of time required for each step and thus determine the time to begin preparation.

## Work Motions

Workers can increase their productivity by learning to make the most of every motion. Workers should be aware of the work areas in which they are the most productive. Food and equipment should be placed in these areas. Nothing should be outside the maximum reach area. There should be no unnecessary reaching. Equipment, utensils, and tools are placed so that work follows a logical order.

Productivity is increased by combining, rearranging, or eliminating work motions. Using the same tool for two motions saves time and energy. For example, use a sandwich spreading spatula with a cutting edge that permits both spreading and cutting. Repeating a single motion helps speed work. Slicing many slices of meat at once is faster than stopping to place each slice on a tray after cutting it. Small motions take less time and energy than large ones. Using one finger to turn on the mixer takes less energy than whipping cream by hand using a wire whip. Gravity can help do the work and handling of food can be reduced by using a chopping board near the edge of the sink and letting the chopped pieces fall into a container in the sink. Figure 20.3 illustrates a work motion setup for breading procedures.

**Example of Work Motions**



Motion economy is often achieved by using hands and arms more efficiently. Use both hands in unison or move arms at the same time whenever possible. When reaching to place a carton of milk and an empty glass on a tray, reach for the carton with one hand and for the glass with the other. Move arms simultaneously in opposite and symmetrical directions. When preparing a tray of salad plates, a right-handed person should hold the plate in the left hand and put lettuce on the plate with the right hand. Use natural rhythm with continuous, curved motions. When washing a table top, use continuous, curved movements and avoid using straight-line movements that start and stop.

The foodservice supervisor or manager usually sets up the most efficient work method for each task. New employees are taught these methods. Workers must learn the proper way to hold and use equipment and to perform each task. Skilled workers can

**Station Setup for Standard Breading Procedures**

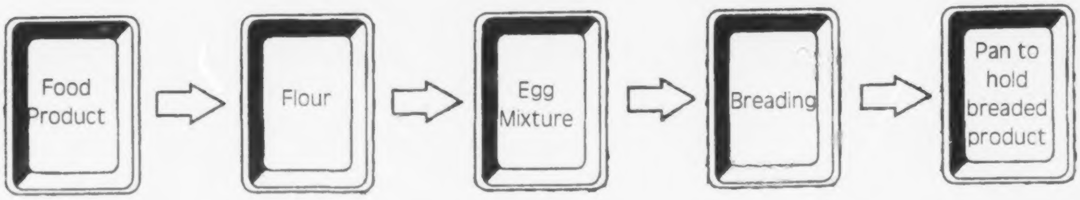


***Figure 20.3***

devise additional work simplification methods. Some general work simplification guides include the following:

- Plan ahead – think through all the steps in the task before beginning.
- Eliminate unnecessary steps or movements.
- Assemble all supplies before beginning work.
- Select the best tools for the job.
- Keep your mind on your work.
- Maintain good posture.
- Clean up as you work.

◆ ***Essential Questions:*** ◆
***Work Simplification***

1. What is work simplification?
2. How can foodservice workers increase productivity through work motions?

## PLATING THE FOOD

### Food Portioning

***Portioning*** refers to dividing food into servings of equal size. Portion is another word for serving. ***Standard portions*** ensure that everyone gets exactly the same size serving. This contributes to both cost control and customer satisfaction.

Decisions regarding portion size are influenced by the type of meal, food choices, serving methods, kinds of customers, dietary needs, and cost of food and supplies. Portion size may also be influenced by local customs. Portions in health care facilities are determined by the dietary needs of the patient.

***Portion control*** refers to the techniques used to ensure standard size servings. Portion control may be achieved in different ways for different foods. It may be achieved at the point of purchase (for example, purchase 4 ounce hamburger patties, sliced bread, or a pre-portioned frozen entree for 20). Portioning may be achieved during food preparation by weighing dough for rolls, using a scoop to measure sandwich filling, using a standard size pan for a cake, or using individual custard cups for baked custard. It may be achieved when foods are served. Using a standard scoop ensures standard servings of foods like mashed potatoes and ice cream. Markers can be used to obtain uniform servings of pies and cakes. Prepackaged portions of sugar, ketchup, mayonnaise, salt, pepper, crackers, cereal, milk, and ice cream are frequently used in foodservice.

Servings should be the exact size specified. Serving extra food or failure to use the proper size dipper or ladle specified for the food can cost the foodservice facility money and result in decreased profits. Serving less

**Standard Sizes for Dippers and Ladles**

| Dipper No. | Approximate Measure | Approximate Weight | Suggested Use |
|---|---|---|---|
| 6 | 10 T (2/3 c.) | 6 oz. | Entree Salads |
| 8 | 8 T (1/2 c.) | 4-5 oz. | Entrees |
| 10 | 7 T (3/8 c.) | 3-4 oz. | Desserts |
| 12 | 5 T (1/3 c.) | 2 1/2-3 oz. | Muffins, salads, desserts |
| 16 | 4 T (1/4 c.) | 2-2 1/4 oz. | Muffins, desserts |
| 20 | 3 1/5 T. | 1 3/4-2 oz. | Sandwich fillings, muffins, cupcakes |
| 24 | 2 2/3 T. | 1 1/2-1 3/4 oz. | Cream puffs |
| 30 | 2 1/5 T. | 1-1 1/2 oz. | Large drop cookies |
| 40 | 1 1/2 T. | 3/4 oz. | Drop cookies |
| 60 | 1 T. | 1/2 oz | Small drop cookies, garnishes |
| Ladles | 1/8 c. | 1 oz. | Sauces, salad dressings |
| | 1/4 c. | 2 oz. | Gravies, sauces |
| | 1/2 c. | 4 oz. | Stews, creamed foods |
| | 2/3 c. | 6 oz. | Stews, creamed foods |
| | 1 c. | 8 oz. | Soup |

Source: *West and Wood Introduction to Food Service*, J. Payne - Palacio and M. Theis, Copyright © 1997 by Prentice Hall. Reprinted by permission of Prentice Hall.

*Table 20.7*

than the specified amount can result in dissatisfied customers and wasted food. Serving the wrong amounts to patients may be harmful to their health. Indifference toward cost control can cost a person his or her job. Table 20.7 lists standard sizes for dippers and ladles used in foodservice.

## Appearance

In addition to serving specified portions, attention must be given to the appearance of food on the plate. First, the correct size dish or plate should be used. A large amount of food on a small plate may appear sloppy; a small amount of food on a large plate appears inadequate. Foods should not run together on the plate. Bread should not be placed where it will soak up juice from vegetables. Foods that melt, such as butter or congealed salads and desserts, should not be placed near hot foods. Foods need to be balanced for color, texture, shape, and flavor. The appearance of food often is improved by the addition of a colorful garnish. Appropriate garnish should be added as directed.

## Garnishing

A ***garnish*** is a food used to decorate another food. Garnishes may range from simple to elaborate, but simple ones are usually best. A garnish should never overpower the food with which it is served.

Garnishes should be colorful. They may be yellow, orange, red, green, white, brown, tan, or black. Natural colors are more appealing than artificial ones. The garnish should contrast, but not clash, in color with the food being decorated. A strawberry might garnish a fruit salad. Sliced hard-cooked eggs would add color to a meat salad. A sprig of parsley would add color to a plate of roast beef.

The flavor of the garnish should be compatible with the food. A red cherry would contrast in color with a vegetable salad, but the flavors are not compatible. A cherry tomato would be a better choice.

The addition of garnishes should be carefully planned. Garnishes cost money and must be considered as part of the food cost. They take time to prepare and must be considered in planning the production schedule. Directions for garnishing foods are usually provided in the standard recipes used in foodservice.

When garnishing foods, fresh garnishes of high quality should be used. There is nothing attractive about wilted parsley or dried lemon wedges. The placement of garnishes should be balanced and not placed all in one spot. They should be used to add height to the plate. Odd numbers are usually more pleasing. For example, three lemon slices on a platter of fish are more interesting than four. If the garnish is a different temperature than the food, the garnish should be protected to keep it at the correct temperature. For example, cranberry jelly could be placed on a candied apple ring or mint jelly placed on an orange slice to keep the jelly from melting on a hot plate. The use of toothpicks should be avoided in garnishes unless they can be seen easily.

### ◆ Essential Questions: ◆ Plating the Food

1. What is the purpose of portion control?
2. What are some guidelines for plating food?
3. What are some guidelines for garnishing food?

## Chapter Highlights

- Standardized recipes are formulas which help to maintain quality and cost control in quantity food production. Standardized recipes list ingredients, utensils and tools, directions, cooking information, yield, and number of servings. It is important to understand the terminology used in standardized recipes.
- The yield, or number of servings, can be adjusted by increasing or decreasing the amount of each ingredient by a set factor or amount.
- Speed and accuracy in recipe use can be developed by observing basic guidelines. These guidelines include reading the recipe before beginning, estimating the time needed for preparation, assembling ingredients, getting out equipment needed, arranging ingredients and equipment in order of use, making pre-preparations, and following directions.
- A convenience food is any partially prepared food product or ingredient which saves production time. Convenience foods may be fresh, frozen, freeze-dried, dehydrated, or canned. They are available for hors d'oeuvres, entrées, soups, sauces, vegetables, fruits, salads, and desserts.
- Work simplification means doing a task in the easiest, simplest, and quickest way. Work simplification eliminates unnecessary steps and wasted motions. It also helps to prevent fatigue.
- Each foodservice facility is divided into work centers called stations. Typical stations include beverage, cold, hot, bake, and serving stations. The number and types of stations depend on the menu, the type of service, and the size of the kitchen. The placement of the work stations is determined by the flow of both the food and the service. Within a station, the work flow is usually from left to right.
- Time is managed in the foodservice facility through use of time schedules, production schedules, and timing of tasks by individual workers.
- Productivity is increased by combining, rearranging, or eliminating work motions. Most motions should be made within the normal work area or area of comfortable reach. Motion economy is often achieved by using hands and arms more efficiently.
- Portioning refers to dividing food into servings of equal size. Portion is another word for serving. Standard portions ensure that everyone gets exactly the same size serving. Portion control refers to the techniques used to ensure standard size servings.
- When food is served, portions should be the exact size specified. The correct size plate or dish should be used. Attention should be given to the appearance of the food on the plate.

# Chapter 21

## Beverages

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- activated charcoal
- beverage station
- brewed coffee
- buttermilk
- caffeine
- cappuccino
- chocolate drink
- chocolate milk
- demitasse
- espresso
- fill line
- homogenized milk
- punch
- skim milk
- steeped
- whole milk

Foodservice establishments serve a variety of beverages. The most frequently prepared beverages are coffee and tea. Cocoa and hot chocolate are also available in most foodservice establishments. Some popular beverages require no preparation. These include milk, fruit juices, vegetable juices, and carbonated beverages. Fountain specialties like shakes and malts may also be served. Some foodservice establishments serve alcoholic beverages, which are served *only* by persons who meet minimum age requirements and *only* to patrons who meet minimum age requirements. The ***beverage station***, where both hot and cold beverages are prepared, usually is located in or near the cold food or pantry station. Some establishments locate several beverage pick-up stations in the dining area as well. Use of several beverage pick-up stations provides service personnel with quick access to beverages.

## BEVERAGE SERVICE

Beverages are served before, with, or after a meal according to the customer's wishes. In the United States, many restaurants providing seated service, serve iced water as soon as customers are seated. Some cities have water restrictions and serve water only on request. At breakfast, coffee may be served immediately as well. Coffee is frequently served at lunch and dinner as an after dinner drink. Coffee and fountain drinks may be served alone or with a snack. Preparation of quality beverages is not difficult when the following few basic guidelines are remembered:

(1) Start with quality ingredients.
(2) Follow preparation exactly.
(3) Keep beverage equipment clean and spotless.
(4) Serve beverages immediately after they are prepared.
(5) Avoid lengthy holding or reheating of hot beverages.

### Ice Service Guidelines

Ice needs for a foodservice establishment vary greatly depending on the type of food and beverage services offered. Refer to Table 21.1 for ice service guidelines.

### Caffeine Content of Beverages

***Caffeine*** is a chemical compound that occurs naturally in the parts of many plants. Caffeine is classified as a mild stimulant by pharmacologists because of its stimulant effect on the central nervous system. Caffeine is found in coffee beans, tea leaves, cocoa beans, and cola nuts.

Due to health considerations or personal taste, many individuals prefer decaffeinated beverages. Most of the caffeine in coffee, tea, and other beverages can be removed through various decaffeination processes. Table 21.2 lists the caffeine content of several popular beverages.

◆ **Essential Questions:** ◆
**Beverage Service**

1. What are five guidelines for preparing quality beverages?
2. What is the purpose of the beverage station?

## TYPES OF BEVERAGES

The beverage selection at a foodservice establishment is most often listed on the menu. The most common beverages served in foodservice are iced water, coffee, tea, dairy beverages, fruit and vegetable beverages, and carbonated beverages.

### Iced Water

Iced water is usually the first beverage served to the customer in a seated service restaurant. The iced water often influences the customer's first impression of the restaurant. There is no excuse for serving tepid, cloudy water.

To prepare iced water, the wait staff should begin with chilled glasses, if possible. Ice cubes or crushed ice are added using tongs or a scoop. Glasses should never be dipped into the ice machine to fill. The glass could be chipped or broken, creating a health hazard, and necessitating disposal of the ice and cleaning of the machine to remove the broken glass. Iced water can be added from a pitcher containing ice and water at the customer's table, or the glass can be filled from an iced water dispenser and served from a tray. A pitcher containing ice water should be kept handy for refilling water glasses as needed. Some restaurants garnish ice water with a twist of lemon, lime, or a sprig of mint.

## Ice Service Guidelines

| Type of Establishment or Use | Ice Needs per Day |
|---|---|
| Restaurant<br>Bar/cocktail lounge<br>Water glass service<br>Salad bar | 1 1/2 pounds per person<br>3 pounds per person (or per seat)<br>4 ounces ice per 10-ounce glass<br>30 pounds per cubic foot (multiply by the times you restock the ice during the day) |
| Quick-service restaurant | 5 ounces per 7-10 ounce drink<br>8 ounces per 12-16 ounce drink<br>12 ounces per 18-24 ounce drink |
| Hotel – guest ice<br>Hotel – catering<br>Health care – patient ice<br>Health care – cafeteria<br>Convenience store – self-serve drinks | 5 pounds per room<br>1 pound per person<br>10 pounds per bed<br>1 pound per person<br>6 ounces per 12-ounce drink<br>10 ounces per 20-ounce drink<br>16 ounces per 32-ounce drink |
| Convenience store – cold plate dispense | 50 percent more ice per day than listed above |

Source: *Design and Equipment for Restaurant and Foodservice*, C. Katsigris and C. Thomas, Copyright © 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

*Table 21.1*

## Coffee

Americans drink more coffee than any other beverage. Because of its popularity, the quality and quantity of coffee served often influences judgments of the foodservice establishment. Coffee may be either brewed or instant, caffeinated or decaffeinated.

**Brewed Coffee.** *Brewed coffee* is made from ground roasted coffee beans and water. Each method of brewing requires a specific grind for best results. If the ground coffee is too coarse, the coffee will be weak; if it is too fine, the coffee will be murky. The quality of water also influences the taste of the coffee. The water should be slightly hard and not artificially softened. Water with an undesirable taste or which is high in chlorine or iron should be filtered through ***activated charcoal***. Activated charcoal is specially treated to remove sediment, undesirable tastes, and odors from water.

Coffee is made in electric urns or brewers. The equipment used to make coffee must be absolutely clean. Coffee contains an oil that collects inside the containers that can give the coffee a bitter taste. Daily cleaning will prevent off-flavors and odors.

To make good coffee by the brewing method, follow these directions:

- Begin with clean equipment and a new coffee filter or bag.
- Obtain fresh coffee.
- Use the appropriate grind and brewing time.

| Grind | Extraction Time |
|---|---|
| Fine or Vacuum | 2-4 minutes |
| Drip or Urn | 4-6 minutes |

**The Amount of Caffeine in Selected Beverages**

| | Caffeine (mg) |
|---|---|
| Coffee (5-oz. cup) | |
| Drip method | 110-150 |
| Percolated | 64-124 |
| Instant | 40-108 |
| Decaffeinated | 2-5 |
| Instant decaffeinated | 2 |
| Tea (5-oz. cup) | |
| 1-minute brew (black) | 21-33 |
| 3-minute brew (black) | 35-46 |
| 5-minute brew (black) | 39-50 |
| Instant | 12-28 |
| Iced tea (12-oz. can) | 22-36 |
| Chocolate products | |
| Hot cocoa (6-oz. cup) | 2-8 |
| Milk chocolate (1 oz.) | 1-15 |
| Soft drinks (12-oz. can) | |
| Coca-Cola | 65 |
| Dr. Pepper | 61 |
| Mountain Dew | 55 |
| Tab | 49 |
| Pepsi-Cola | 34 |
| Diet RC | 33 |

Source: *Introductory Foods*, M. Bennion, Copyright © 1995 by Prentice Hall. Reprinted by permission.

***Table 21.2***

Regular (percolator) 6-8 minutes

- Measure suggested proportions of coffee to fresh water. Check for correct temperature (193°F to 200°F).
- Brew.
- Remove grounds.
- Serve.

Coffee should be held only a short time. After the first ten minutes the flavor and fragrance of the coffee deteriorate, until the quality becomes unacceptable. For this reason, it is wise to make coffee frequently and in small amounts.

**Instant Coffee.** Instant coffee, both caffeinated and decaffeinated, is served in individual packages. It may be mixed with hot water in a cup or pot, or it may be served in the package with a cup or pot of hot water.

**Other Coffee.** ***Espresso*** or ***expresso*** coffee is strong and dark. It is served as an after dinner beverage in small cups. ***Demitasse*** refers to "half cup" and is strong, black coffee served after dinner in small cups. ***Cappuccino*** combines equal amounts

of espresso and frothy steamed milk. It may be topped with whipped cream and cinnamon served in a tall cup. Iced coffee is double strength coffee diluted with melting ice.

**Service of Coffee.** Coffee is served black (with nothing added), or with cream and sugar as desired by the customer. The cup may be preheated by rinsing with hot water. Frequent refills ensure that the coffee is kept hot.

## *Tea*

The popularity of hot tea is increasing in the United States. Iced tea is already well-liked, especially during the summer months. Tea may be prepared from loose tea, tea bags, or instant tea. It may be made either by the pot or the cup. Packaging and market forms of each include the following:

- Standard cup size bags = 200 per pound
- Service pot bags = 150-175 per pound

**Making Tea.** Tea is ***steeped***. This means that the tea leaves are soaked in almost boiling water for a short time to extract the tea flavor. All that is needed to prepare good tea is high grade tea, freshly boiled water, and a preheated pot.

To make hot tea:

(1) Rinse the pot with boiling water.
(2) Place either tea bags or bulk tea tied loosely in a bag in the pot.
(3) Fill the pot with freshly boiled (hot, not boiling) water.
(4) Steep for three minutes.
(5) Remove the tea.
(6) Preheat the tea cups with boiling water.
(7) Serve immediately.

To make iced tea, use one of the following three methods:

(1) Prepare hot tea steeped four to six minutes at two to three times its usual strength and pour over ice.
(2) Pour hot tea concentrate into cold water.
(3) Mix instant tea in cold water.

This last method saves ice since the tea is already cool when it is poured over ice. Do not refrigerate iced tea prior to service. Cloudiness develops in iced tea that is refrigerated.

**Service of Tea.** Another alternative for serving hot tea is to serve a tea bag alongside a pot of hot water. However, this may result in a tepid cup of tea with no flavor. An extra pot of hot water can be served so the customer can dilute the tea, if desired.

Hot tea may be served with lemon and sugar, or milk and sugar as the customer desires. Iced tea is usually served with lemon and sugar.

## *Dairy Beverages*

Protein-based beverages include milk, hot cocoa, and shakes and malts. They are made with milk, ice cream, and similar products.

**Milk.** Several kinds of milk are served as beverages. ***Whole milk*** contains all the natural butterfat found in milk. ***Skim milk*** contains less than one percent butterfat. To replace the vitamins removed with the butterfat, it is fortified with Vitamin A and Vitamin D. Either whole or skim milk may be homogenized. ***Homogenized milk*** has been treated mechanically so that the butterfat is scattered evenly throughout the milk and will not rise to the top. ***Chocolate milk*** and ***chocolate drink*** differ only in the amount of butterfat. Chocolate milk has as much butterfat as whole milk. Chocolate drink has much less. ***Buttermilk*** is a fermented milk with a sharp, slightly acid taste. It usually has flecks of butter throughout.

**Service of Milk.** Milk should be refrigerated until served and served very cold. Depending on the type of foodservice, milk is sometimes served in half pint cartons along with a clean glass.

**Hot Chocolate and Cocoa.** Hot chocolate and cocoa are especially popular in the winter months. They may either be cooked or prepared from a packaged mix.

To prepare hot cocoa, combine cocoa with sugar and enough water to form a thin paste. Cook until thick and glossy. Add the cooked mixture to hot milk, stirring briskly with a wire whisk or spoon. If the cocoa will not be served at once, make it in a double boiler so it may be kept hot without scorching.

To use individually packaged mixes of chocolate or cocoa, pour the mix into a cup or individual pot. Add hot water and mix well.

**Service of Hot Chocolate and Cocoa.** Hot chocolate and cocoa should be served very hot, preferably in preheated cups. A spoonful of whipped cream, a marshmallow, shaved chocolate, or a cinnamon stick may be used as a garnish.

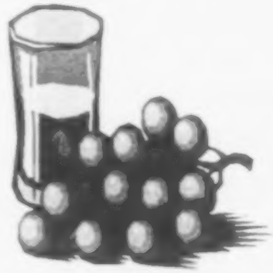
**Milk Shakes.** Milk shakes and malts are favorite fast-food items. Most milk shakes in fast-food establishments are prepared in an automatic dispenser. Syrup is added automatically or by hand depending on the type of dispenser. Malt may be added to make a malted milk shake. The key to quality control when using an automatic dispenser is to follow the manufacturer's directions exactly. Be especially careful to follow the daily start-up routine outlined in the operator's manual. When the machine is ready for operation, draw a sample shake. Check it for consistency, flavor, and color. Make any necessary adjustments. Always be sure to use the correct cup size. Fill the cup only to the fill line. The ***fill line*** is a line near the top of the cup which ensures that all shakes are the same size.

For milk shakes made to order, a blender is used. It is more difficult to achieve consistent quality when shakes are made in a blender. Ingredients can be measured more accurately in an automatic dispenser than in a blender.

**Service of Milk Shakes.** Milk shakes are usually served with a straw and a long spoon. In fast-food establishments, shakes "to go" are covered with a plastic cap.

## *Fruit And Vegetable Beverages*

Fruit and vegetable juices are served as breakfast beverages and as appetizer cocktails. Tomato, orange, grape, and grapefruit juice are popular breakfast beverages. Nonalcoholic appetizer cocktails may be either fruit juice or vegetable juice or a combination of juices. Combinations of fruit juices are usually called ***punch***. Sometimes carbonated beverages such, as soda or ginger ale, are added to punch. Tomato juice cocktails are made by adding a dash of Worcestershire or hot pepper sauce to tomato juice. Fruit punches are often made from a mixture of



fruit juices and strong tea, ginger ale, gelatin, or sherbet.

Fruit and vegetable juices should be served ice cold in small, well-chilled glasses. A garnish may be used for added interest. Celery sticks are often used to garnish tomato juice. Mint leaves, lemon or lime slices or wedges, and strawberries are frequently used to make fruit juices more appealing.

## Carbonated Beverages

Carbonated beverages (soft drinks) are extremely popular in the United States. These beverages are usually drawn from an automatic dispenser that contains flavored syrup and carbonated water. Soft drinks are usually sold in three sizes: small (12 oz.), medium (16 oz.), and large (24 oz.). When preparing soft drinks, fill the cup or glass half full with ice. Tilt the cup when dispensing to reduce foaming. Cover "to go" beverages with a plastic lid. Serve with a drinking straw.

### ◆ Essential Questions: ◆
### Types of Beverages

1. Why is iced water service in a seated-service restaurant important?
2. Why should a glass never be dipped into an ice machine?
3. What is important to remember when making coffee?
4. What two guidelines are important to remember when serving coffee?
5. Why is tea steeped?
6. What are the steps for making hot tea?
7. What is the difference in whole milk and skim milk?
8. What is the difference between non-alcoholic appetizer cocktails and punch?

## Chapter Highlights

- Foodservice establishments may serve a variety of beverages, including coffee, tea, cocoa, hot chocolate, milk, fruit juices, vegetable juices, carbonated beverages, shakes, malts, and alcoholic beverages. Some foodservice establishments serve alcoholic beverages, which are served *only* by persons who meet minimum age requirements and *only* to patrons who meet minimum age requirements.
- Beverages have many menu uses. For example, water is often used as a before meal introduction; coffee is frequently served as an after dinner drink.
- Preparation of quality beverages is not difficult if you remember a few basic guidelines:
  - start with quality ingredients
  - follow the preparation procedures exactly
  - keep beverage equipment clean and spotless
  - serve beverages immediately after they are prepared
  - avoid lengthy holding or reheating of hot beverages
- Coffee, the most popular drink in the United States, may be either brewed or instant. Brewed coffee is made from ground roasted coffee beans and water. Instant coffee, both caffeinated and decaffeinated, is served in individual packages. Coffee is served with cream and sugar as desired by the customer.
- Tea may be served hot or cold and is prepared from loose tea, tea bags, or instant tea. Tea may be made by the pot or the cup and is steeped to extract the flavor.
- Whole milk, homogenized milk, skim milk, chocolate milk, chocolate drink, and buttermilk can be served as beverages. Milk should be served very cold.
- Hot chocolate and cocoa are popular in the winter months and may be either cooked or prepared from a packaged mix.
- Most milk shakes and malts prepared in fast-food establishments are prepared in an automatic dispenser. Milk shakes made to order are made in the blender. Milk shakes are usually served with a straw and a spoon.
- Fruit and vegetable juices are served as breakfast beverages and as appetizer cocktails. Combinations of fruit juices are usually called punch. Fruit and vegetable juices should be served ice cold in small, well-chilled glasses. Garnishes may be added for interest.
- Carbonated beverages are usually drawn from an automatic dispenser that contains flavor syrup and carbonated water.
- Cold beverages, like milk, should be stored and served cold. Hot beverages, like coffee and tea, should be kept hot and not stored or reheated.

# Chapter 22

## Appetizers

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

antipasto
appetizer
aspic
beverage cocktails
canapés
crudités
dips
fruit cocktails
hors d'oeuvres
relishes
ribbon sandwich
rolled sandwich
seafood cocktails
tea sandwiches

An ***appetizer*** is a small amount of food used to stimulate the appetite. Appetizers should be light and tasty, colorful and attractive, fresh and tempting, and served before the main course of a meal.

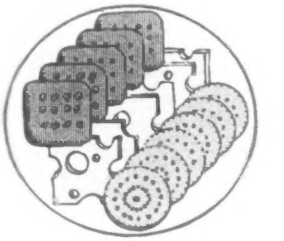
## TYPES OF APPETIZERS

A limitless variety of appetizers are possible. Creativity and imagination are essential in their preparation. Most appetizers can be classified into one of seven groups:

- Hors d'oeuvres
- Canapés
- Spreads and dips
- Cocktails
- Relishes
- Salads
- Soups

## Hors D'oeuvres

***Hors d'oeuvres*** (or DURVS) are small, tasty bits of food served before a meal. They may be cold or hot. They may be finger foods or foods eaten with a small pick or fork. They may require a little or a lot of preparation. Items that make up an hors d'oeuvre should vary in color, texture, form, and flavor.



Cold hors d'oeuvres can be purchased ready to serve, or they may require preparation. Cheese, fish, and meat are examples of foods which may be purchased ready to serve. Other cold hors d'oeuvres are made from hard cooked eggs, raw or cooked vegetables, fruit, fish, meat, or cheese. Cold hors d'oeuvres are usually prepared in the pantry or cold food preparation area. Hot hors d'oeuvres are usually prepared at other stations. ***Antipasto*** is an Italian term for hors d'oeuvres. Typical foods include salami, bologna, provolone and mozzarella cheeses as well as marinated mushrooms. Refer to Table 22.1 for examples of popular hors d'oeuvres.

## Canapés

***Canapés*** are small, open-faced sandwiches. Canapés may be either hot or cold. Canapés usually have three parts: the base, the spread, and the garnish. Sometimes the canapé is covered with a glaze called an aspic.

**Base.** The base of a canapé can be small pieces of bread, toast, crackers, wafers, chips, or pastries cut into various shapes. When bread is used, long, square loaves are preferred. The bread is thinly sliced and the crusts are trimmed. White bread is usually used, but whole wheat bread, rye, or oatmeal are also used. Fruit, nut, or other quick breads may also be used. The bread is usually toasted on one side. Day-old bread is best for spreading. Crackers, pastry, and wafers are less satisfactory than bread. They quickly lose their crispness.

**Spread.** The spread for canapés usually is based on butter or margarine. The butter may be mixed with mayonnaise, cheese, mustard, fish, or vegetables. The spread should be soft enough to cover the bread easily. The flavor should complement the rest of the canapé. Herbs such, as tarragon or parsley, are often blended with butter to add flavor.

The spread has several purposes. It adds flavor to the canapé and helps keep the base from becoming soggy. It also helps keep the bread from drying out, and it helps hold the garnish in place.

Apply the spread lengthwise on the untoasted side of the bread. Cover the slice evenly to the edges. Refrigerate until the spread has hardened, then cut into any desired shape.

**Garnish.** An edible garnish is often added to the top of the canapé to make it more attractive. The garnish should add color, shape, and flavor. The garnish should complement the flavor of the spread. Anchovies, bits of fish, or curls of meat may be used. Herbs, such as parsley or mint, and spices, such as paprika, may be used to garnish canapés. Vegetables, such as carrot curls, radish slices, or green pepper strips, are also good choices.

**Aspic.** After the canapé is prepared, it may be covered with an aspic. ***Aspic*** is a jelly flavored with bouillon or tomato. It is spread thinly over the canapé. The aspic helps hold the garnish in place. It also helps keep the canapé from drying out. When chilled, it forms a thin, glossy glaze.

**Ingredients.** Various kinds of canapés are possible. Eggs, cheese, fish, meat, and poultry are often the primary ingredients.

## Hors d'oeuvres

| Type | | Examples |
|---|---|---|
| **Cold hors d'oeuvres** | | |
| **Meat** | +<br>+<br>+ | Thinly sliced smoked sausages, salami, ham, roast beef, cocktail wieners, or other meat<br>Ham and cream cheese rolls<br>Salami and cheese rolls |
| **Fish** | +<br>+<br>+<br>+ | Smoked salmon, smoked oysters or clams, shrimp, pickled herring, or fish roe<br>Shrimp and pineapple cube on a pick<br>Skewered anchovies, pearl onions, sliced cucumbers, cherry tomatoes, or stuffed olives<br>Herring marinated in sour cream |
| **Cheese** | +<br>+<br>+ | Cubed cheese on toothpicks<br>Soft cheese with crackers<br>Cheese balls |
| **Eggs** | + | Deviled or stuffed eggs |
| **Vegetables** | +<br>+<br>+<br>+<br>+<br>+<br>+<br>+<br>+ | Carrots, green pepper, zucchini, cucumber, turnips, or celery cut into sticks, circles, or slices<br>Radish roses or fans<br>Carrot curls<br>Cauliflower buds<br>Whole cherry tomatoes<br>Celery stuffed with cheese<br>Quartered cherry tomatoes filled with a mixture of cream cheese and blue cheese<br>Cucumber stuffed with ham or shrimp mixture<br>Artichoke hearts marinated in Italian dressing |
| **Fruit** | +<br>+<br>+<br>+ | Sliced apples or pears<br>Melon balls or cubes<br>Dried apricots, prunes, or dates stuffed with cream cheese and garnished with nuts<br>Fresh strawberries and powdered sugar |
| **Hot hors d'oeuvres** | +<br>+<br>+<br>+<br>+<br>+<br>+<br>+ | Miniature pizzas<br>Oyster broiled in bacon wrap<br>Minature meatballs in highly seasoned tomato sauce<br>Small pastries filled with chicken or shrimp mixture<br>Small wedges of quiche (KEESH)<br>Tiny hot croquettes<br>Fried clams, shrimp, or mock chicken legs<br>Broiled cocktail wieners |

⇒ *Tal 22.1*

These ingredients may be used as part of the spread or as the garnish. Food items to use in combination or alone for canapés include:

- Vegetables, pickles, relishes (radish slices, olives, pickles, asparagus tips, cherry tomato halves, or marinated mushrooms)
- Fish (smoked salmon, shrimp, crab meat, tuna, or sardines)
- Meats (ham, salami, chicken, turkey, or roast beef)
- Cheeses or hard-cooked egg slices

**Canapé Variations.** Rolled sandwiches, ribbon sandwiches, and tea sandwiches are variations of canapés. A ***rolled sandwich*** consists of a thin slice of crustless bread spread with filling, then rolled, chilled, and sliced. A ***ribbon sandwich*** is made by alternating crustless slices of whole wheat and white bread spread with filling, then chilling before slicing. ***Tea sandwiches*** are made with sweet breads, such as date-nut, banana, or orange-nut spread with softened cream cheese. They may be decorated with a bit of marmalade or preserves. Tea sandwiches may be either closed or open faced.

## Spreads and Dips

Spreads are food mixtures similar to sandwich fillings. Guests can use the spread to make their own canapés. ***Dips*** are soft spreads into which chips, bread sticks, vegetables, and fruit are dipped. Cheese, avocados, clams, anchovies, or shrimp blended with sour cream or softened cream cheese are often the primary ingredients in dips. Chocolate and caramel are usually the primary ingredients in sweet dips.

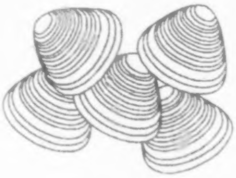
## Cocktails

Cocktails may be beverages, fruit, or seafood. Cocktails should be colorful, appealing, and cold.

**Beverage Cocktails.** ***Beverage cocktails*** may be either alcoholic or nonalcoholic. Nonalcoholic beverage cocktails are made of fruit and vegetable juices. The juice should be colorful, tangy, and not too sweet. Orange, pineapple, apricot, papaya, and cranberry are fruit juices frequently used in cocktails. Tomato juice is the most popular vegetable juice used in cocktails. They may be garnished with a sprig of mint, a celery stick, or an olive for added eye-appeal.

**Fruit Cocktails.** ***Fruit cocktails*** are made of fresh or canned fruit. Melon balls, grapefruit sections, orange slices, pineapple tidbits, Bing cherries, sliced bananas, strawberries, pears, and grapes are appealing in fruit cocktails.

**Seafood Cocktails.** ***Seafood cocktails*** are made of shrimp, crab meat, clams, oysters, or other seafoods.



## Relishes

***Relishes*** are crisp vegetables, pickles, or olives. Raw vegetable relishes are called ***crudités*** (croo-dee-days; "cru" means "raw" in French). These include celery hearts, green onions, radishes, carrots, zucchini, cucumbers, cauliflower, and broccoli. Sweet-sour vegetable relishes include sauerkraut, sweet-sour corn kernels, miniature corn-on-the-cob, pickled beets, and sweet-sour beans. Pickles are usually sweet, dill, or sour and are served whole, sliced, or chunks. Olives may be black or green and may be stuffed with pimiento.

## Salads

An appetizer salad is small and light. It is crisp and colorful. Its purpose is to stimulate the appetite. It should never be so heavy as to dull the appetite. Tart fruit, salad greens, and seafoods are popular for appetizer salads. Examples of appetizer salads and descriptions of salad preparation techniques are found in Chapter 24, Salads.

## Soups

Thin, clear soups are used as appetizers. Their purpose is to stimulate the appetite for the meal that follows. Broth, bouillon, consommé, and jellied soups are popular appetizers. More information on soups and their preparation is in Chapter twenty-three, Soups and Sauces.

### ◆ Essential Questions: ◆
### Types of Appetizers

1. Why are appetizers served in foodservice? Describe three types of appetizers.
2. What is the differences between a spread and a dip?

## PREPARING AND SERVING APPETIZERS

Most appetizers and hors d'oeuvres are prepared in advance. Some, especially cocktails, may be prepared as they are ordered. When appetizers or hors d'oeuvres are prepared for special occasions, the number prepared is based on the number and types of guests expected, the occasion, the length of serving time, the menu, and the style of service. Usually, 10 percent more appetizers or hors d'oeuvres than needed are prepared.

For appetizers and hors d'oeuvres that are prepared in advance, assembly line techniques are used in their preparation. For right-handed workers, the work flows from left to right. To set up an assembly line for appetizers, follow these guidelines:

- Assemble tools, equipment, and ingredients, arranging them in a logical order.
- Use both hands whenever possible.
- Complete one step in the assembly before beginning another.
- Work at a steady, rhythmic pace.
- Work quickly to keep food out of the temperature danger zone (41°F to 140°F).

Two workers can use the same supply dishes by working on opposite sides of the table. More than two workers can form an assembly line by dividing the tasks into logical steps.

## Common Procedures

**Hors d'oeuvres.** Hors d'oeuvres may be arranged on individual plates and served as the first course, or a variety of hors d'oeuvres may be arranged on a tray and passed to guests.

**Canapés.** Canapés are usually served as appetizers before the main course of a meal. They may also be served at a tea, reception, or party.

**Spreads and Dips.** Spreads are served in a dish surrounded by crisp crackers, bread sticks, or tiny biscuit halves. Dips are soft spreads and are served with chips, bread sticks, vegetables, and fruit. The foods served with spreads and dips should be chosen with care. The crackers or chips served with spreads and dips should be sturdy enough not to break. Raw vegetables, like cauliflower, celery, mushrooms, carrots, zucchini, broccoli, and cucumber are some of the vegetables served with dips. Fruits, such as apples, pears, and bananas, should be dipped in an ascorbic acid solution to prevent darkening. Use lemon juice, fruit juice, vinegar and water, citric acid and water, or a commercial product.

Cheese
SPREAD

**Cocktails.** Fruit cocktails made with pieces of fruit are often served in stemmed glasses. Seafood cocktails are usually served with lemon wedges or slices and a spicy tomato sauce. Greens, such as lettuce or watercress, is often used as a base for the cocktail.

**Relishes.** Guests can enjoy relish trays while waiting for the main course to arrive. Relish trays are also served with the main course.

**Salads.** Salads should be served to guests on chilled plates prior to the main course. Crackers or bread may be served with salads. It is appropriate to serve some salads, such as potato salad or bean salad, with the main course.

**Soups.** Soups are always served prior to the main course unless one of the guests orders soup as a main course. In this case, the server should wait to serve that customer's order until the other guests at that table receive their main course. Crackers or bread should be offered with soup.

## HOLDING AND STORING APPETIZERS

Careful attention to sanitation is needed in the preparation, holding, and storing of appetizers. Sanitation is especially important when the foods being prepared contain uncooked food. Sanitation when handling appetizers is also important because the food is cut into small pieces and handled several times. Frequent handwashing and the use of plastic gloves for assembling appetizers helps prevent contamination.

Appetizers should be covered and stored in the refrigerator at a temperature of 40°F or less. Some appetizers can be made in advance and frozen and used as needed. Keeping appetizers out of the danger zone (41°F to 140°F) as much as possible prevents the growth of bacteria. Appetizers should not stand unrefrigerated for more than four hours at room temperature, and they should remain covered until ready to serve.

### ◆ Essential Questions: ◆ Preparing, Serving, Holding, and Storing Appetizers

1. What are five guidelines for preparing appetizers in an assembly line?
2. What sanitation procedures should be followed for the preparation of appetizers?
3. How should appetizers be stored?

BEST COPY AVAILABLE

## Chapter Highlights

- An appetizer is a small amount of light and tasty food served before a meal to stimulate a guest's appetite.

- The seven classifications of appetizers are hors d'oeuvres, canapés, spreads and dips, cocktails, relishes, salads, and soups.

- Hors d'oeuvres are small tasty bits of food. They may be served hot or cold and eaten as finger foods with a small pick or fork.

- Canapés are small, open-faced sandwiches and may be either hot or cold. The three basic parts of a canapé are the base, the spread, and the garnish.

- Eggs, cheeses, fish, meat, and poultry are the primary ingredients for canapés. Variations of canapés include rolled, ribbon, and tea sandwiches.

- Spreads are similar to sandwich fillings and are used when guests are to make their own canapés. Dips are soft spreads into which chips, bread sticks, vegetables, and fruits are dipped.

- Beverage cocktails may be either alcoholic or nonalcoholic. Fruit cocktails are made of fresh or canned fruit. Seafood cocktails are made of shrimp, crab meat, clams, oysters, or other seafood. All cocktails should be colorful, appealing, and cold.

- Relishes are crisp vegetables, pickles, or olives.

- An appetizer salad is small and light and is used to stimulate the appetites of guests.

- Broth, bouillon, consommé, and jellied soups are often used as appetizers.

- Most appetizers are prepared in advance using assembly line techniques.

- Sanitation is very important in the preparation, holding, and storing of appetizers. Appetizers should be covered and stored in the refrigerator at a temperature of 41°F or below.

# Chapter 23

## Soups and Sauces

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

- 7G Use appropriate terminology related to the food production and service industry.
- 9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.
- 9J Perform appropriate tasks in food production according to industry standards.

bearnaise sauce
béchamel
bisque
borscht
bouillon
brown stock
chowders
consommé
foundation sauces
fruit soup
gazpacho
hollandaise sauce
liaison
meuniere
mirepoix
puree
raft
roux
sachet
velouté
vichyssoise
white stock

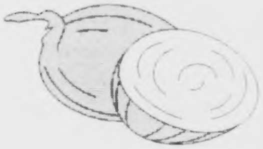
Many soups and sauces have a common beginning. They are made from stocks, the liquid in which meat, fish, or poultry scraps have been cooked together with a variety of vegetables and flavorings. Others have milk or other ingredients as the base. Soups and sauces may be thick or thin and are served hot or cold. Convenience forms of many soups and sauces save preparation time in foodservice establishments.

## STOCKS

Stocks are simple, but time-consuming, to prepare. For this reason, convenience stocks are quite popular. To make stock from scratch, bones and scraps of meat are simmered in water for several hours to extract their flavor. Besides the bones and scraps of meat, vegetables, herbs and spices are used to flavor the stock. The broth is strained and cooled, and the fat removed. Because stocks spoil easily, they must be refrigerated quickly and handled with care to prevent contamination. Stock may also be boiled to reduce its volume to 1/2 or 1/4, then frozen for future use.

Additional time may be needed to clarify the stock for use in clear soups. Clarifying rids the stock of particles that are too fine to be strained out. To clarify stock, a protein food, an acid food, and vegetables are heated in the broth to just below the boiling point. The protein food is usually raw ground beef and egg white. The acid food may be tomato juice, lemon juice, or vinegar. The vegetables are finely chopped or ground. As the boiling point is reached, the mixture coagulates (hardens), forming a solid mass called a ***raft***. The raft separates from the liquid leaving the stock clear. ***Mirepoix*** (pronounced meer-pwah) includes onions, carrots, and celery. It is a flavoring used in stocks and sauces. The basic proportions to make one pound of mirepoix are:

| | |
|---|---|
| Onions | 8 ounces |
| Celery | 4 ounces |
| Carrots | 4 ounces |



A ***sachet*** is a mixture of herbs and spices tied in a cheesecloth bag.

There are four basic kinds of stocks. Each is named for its color or for the ingredients used in making it. The basic stocks are white, brown, poultry, and fish. ***White stock*** is made from raw bones and scraps of veal or chicken. ***Brown stock*** is made from bones and scraps of beef which have been browned in the oven first. Poultry stock is made from backs, necks, wing tips, feet, and scraps of meat from poultry. Fish stock is made from the bones and meat of fish, including fish heads and tails.

Convenience stocks can be bought in powdered, granular, liquid, or pressed-cube form. Both chicken and beef stocks are available in these forms. Hot water is added as directed to ready the convenience stock for use. The resulting stock can be used in soup or sauce recipes.

### ◆ Essential Questions: ◆ Stocks

1. What are the steps used in preparing stocks?
2. What is the procedure for clarifying stocks?

## SOUPS

Soups may be light enough to serve as an appetizer or hearty enough to be a full meal. Some soups are served hot, others cold. Most soups have either a stock base or a milk base and may be thin or thick.

### Thin Soups

Thin soups may be clear like bouillon and consommé, or unclarified like broth. ***Bouillon*** is the French word for broth. The different kinds of bouillon include beef, chicken, and lamb. ***Consommé*** is a clear broth made from bouillon. Cooked vegetables, rice, or noodles may be added to a consommé just before serving. Broth is a thin soup which has not been clarified. It usually contains finely diced vegetables, small pieces of meat, rice, noodles, or macaroni. Thin soups are often served as appetizers.

### Thick Soups

Thick soups are prepared from a stock or milk base thickened by the addition of starch or starchy foods. Starches used for thickening soups include flour or cornstarch. Starchy foods that will thicken a soup include potatoes, rice, noodles, and barley. Soups may also be thickened with ***roux***, a mixture of equal parts of fat and flour. Thickened soups include vegetable soups, creamed soups, and purees.

**Vegetable Soups.** Vegetable soups are made with diced or cubed vegetables. They may contain meat and rice, noodles, or macaroni. Vegetable soups are usually hearty, or thick and filling. The base for a vegetable soup is usually stock. The soup may be thickened with potatoes or with flour. Appropriate garnishes for vegetable soups are chopped parsley, chives, or chervil.

**Cream Soups.** Cream soups are usually named for their flavoring ingredient. Tomato, asparagus, spinach, celery, chicken, mushroom, and shrimp are popular flavors of cream soup. Cream soups should be the consistency of thick cream. They should be smooth and velvety, never curdled. Cream soups are made from a milk base which may be combined with chicken or beef stock. They may be thickened by a roux or by flour. Cream soups are often made in a double boiler to prevent scorching. Cream and a garnish may be added just before serving.

***Bisques*** are thick soups made from shellfish or vegetables prepared like cream soups. ***Chowders***, which contain milk and potatoes, may include fish, shellfish, and/or vegetables.

**Purees.** A ***puree*** is a thick, hearty soup suitable for the main dish of a meal. Puree means mashed. A puree is made from ingredients which are forced through a food mill or china cap. Potatoes, split peas, lentils, beans, and some fresh vegetables, such as cauliflower, spinach, zucchini, and tomatoes, are used in puree soups. The food pulp provides both flavor and texture. The base for a puree is usually a meat stock. Chicken stock is used for puree of potato or fresh vegetables. A garnish and the addition of cream is optional.

**Low-fat Soups.** Consommés and clear vegetable soups are low in fat. Cream soups can be made lower in fat by substituting evaporated skim milk for the cream.

## Specialty Soups

Most specialty soups are hearty soups meant to be served as meals. They can be made from a stock, milk, or a combination base. They may or may not be thickened. The thickening, if used, may be a puree or a roux.

There is a great variety of specialty soups. Most have originated in a certain locale. Some specialty soups have been brought to the United States from other countries. Examples of soups from France include the following:

- Bouillabaisse (boo-ye-BAS)
- Marmite (mar-MEET)

Soups from other countries include the following:

- Minestrone (min-e-STRO-ne) (Italy)
- Olla podrida (O-yapo-DREE-dah) (Spain)
- Sopa de Albondigas (SOAP-ah day al-bon-DEE-gahs) (Mexico)
- Won ton (WAHN-TAHN) (China)
- Mulligatawney (MUL-eh-guh-TAW-knee) (India)

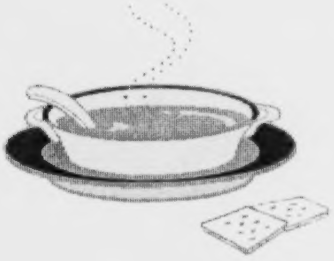
Then again, there are other soups that have originated in different regions of the United States, such as New England Clam Chowder, Philadelphia Pepperpot, and Louisiana Chicken Gumbo.

## Cold Soups

Some soups are served cold. Cold soups are especially popular in the summer. Popular cold soups include jellied consommé, gazpacho, vichyssoise, borscht, and fruit soup. Jellied consommé is made by refrigerating consommé until it gels. ***Gazpacho*** is a cold soup from Spain. It contains chopped fresh tomatoes and cucumbers. ***Vichyssoise*** is a cream soup made from potatoes, onions, leeks, chicken stock, and cream. ***Borscht*** is a smooth beet soup with sour cream that originated in Russia. ***Fruit soup*** is a cold sweet soup from Norway. It is a mixture of lemons, oranges, and chopped dried fruits cooked in pineapple or apple juice and thickened.

## Convenience Soups

Convenience soups are frequently used in foodservice operations to save time and energy. Convenience soups may be canned, frozen, or dried. More than fifty varieties of canned soups are available. These are either ready to serve or require only the addition of milk or water. By combining different kinds of canned soups new flavors can be created. Dried soups may contain only the ingredients for the soup stock or they may include dried vegetables and meat. A variety of different soups are available in dried form.



## Garnishing and Serving Soups

Soups should never be served lukewarm. Hot soups should be served hot in preheated soup dishes. Cold soups should be served cold in pre-chilled dishes. Cold soups may be served in chilled cups surrounded by cracked ice. Standard portion sizes for service of soups include:

- Appetizer soups - 6 to 8 ounces
- Entrée or main course soups - 10 to 12 ounces

Soups should be garnished attractively. Parsley, paprika, freshly ground pepper, chopped chives, onion rings, bacon bits, hard-cooked egg white or yolk, croutons, or grated cheese make attractive soup garnishes. A lemon, lime, or cucumber slice, chopped chives, or a spoonful of sour cream add appeal to cold soups. A dab of whipped cream is good on fruit soup.

Appropriate accompaniments should be served with soups. Crisp crackers, thin brown toast, bread, pastry, bread sticks, or croutons are often served with soup. Croutons are small toasted cubes of bread. They may be plain or seasoned.

## Holding and Storing Soups

Soups should be kept above 140°F or below 41°F as much as possible. Hot soups should be cooled rapidly before refrigerating. Place the pot of soup in a deep sink surrounded by cold running water. Raise the pot off the bottom of the sink using bricks or heavy pans. Stir the soup with a large paddle to hasten cooling. Refrigerate as soon as the soup reaches approximately room temperature. The soup can be refrigerated for several days. Remove from refrigeration only what is needed each day.

### ◆ Essential Questions: ◆ Soups

1. What are thin soups? What ingredients are used?
2. How are soups thickened?
3. What are the differences between cream soups and purees?
4. How should soups be cooled before refrigeration?

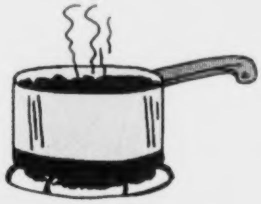
## SAUCES

A sauce is a richly flavored stock or liquid used to complement another food. It may be thickened or unthickened and used to add moisture, color, or texture to another food. It may become a part of a dish or be served as an accompaniment. A sauce should complement, not disguise, the natural flavor of the food.

Most sauces are prepared from a few basic sauces. These basic sauces are called ***foundation sauces***, or mother sauces. The basic sauces are brown sauce, tomato sauce, white sauce, cream sauce, egg sauce, and butter sauce. Other sauces include cold sauces and sweet sauces. The foundation or leading sauces are shown in Table 23.1.

### Brown Sauces

Brown sauces are made from well-browned roux and brown stock from beef. Tomato paste and wine are often added. Variations of brown sauces include jelly sauce, mushroom sauce, picante sauce, and savory mustard sauce. Brown sauce and its variations are usually served with meats.



### Tomato Sauces

Tomato sauce has tomato juice, tomato puree or paste, or fresh tomatoes as its base. It can be made with wine or water, or with beef, fish, or chicken stock. Spices, garlic, sugar, onions, bacon, or ham can be added. The type of tomato sauce preferred in the United States is marinara sauce. It originated in Italy. The meat sauce served with pasta is a variation of tomato sauce. Spanish sauce, Creole sauce, and cacciatore sauce are other variations of tomato sauce.

### White Sauces

White sauces are made with white stock from veal, chicken, or fish thickened with roux. White sauces are also called ***velouté***, which is the French word for velvety. By adding heavy cream and egg yolks, several secondary sauces can be made. The mixture of cream and egg yolks is called a ***liaison***. It is added just before the sauce is served. With the addition of liaison, velouté of veal becomes sauce allemande. Velouté of chicken becomes sauce supreme. Velouté of fish becomes sauce vin blanc (white wine sauce). Additional sauces can be made from each secondary sauce. White sauces are served on beef, pork, veal, lamb, eggs, fish, poultry, or vegetables.

### Cream Sauces

Cream sauces are made from milk thickened with roux. Another term for cream sauce is ***béchamel***. Cream sauce's consistency may be thin, to medium, to thick. The use of the sauce determines its thickness. Variations of cream sauce include Mornay, a la King, Creme, and Newberg. Cream sauces are used with pasta, vegetables, chicken, fish, and eggs.

### Egg Sauces

Egg sauces are emulsions consisting of butter, egg yolks, and a liquid. The butter is held in suspension in the liquid by the egg yolks. Egg sauces are sometimes called butter sauces. Two popular egg sauces are hollandaise and bearnaise. ***Hollandaise sauce*** is an emulsion of butter, egg yolks, and lemon juice. Because hollandaise sauce easily curdles during preparation, a convenience form which is easy to prepare has become increasingly popular. ***Bearnaise sauce*** is made with minced shallots, crushed peppercorns, and tarragon vinegar.

Egg sauces are extremely perishable. They are a frequent cause of food poisoning in foodservice establishments. It is best to prepare egg sauces as needed and use them immediately. Never add leftover sauce to freshly-prepared sauce. Egg sauces are served with eggs, fish, and vegetables.

Foundation Sauces

| Liquid | Thickening Agent | Foundation Sauce |
|---|---|---|
| Milk | + White roux | = Béchamel Sauce |
| White stock (veal, chicken, fish)<br>velouté) | + White roux | = Velouté (veal velouté, chicken velouté, fish velouté) |
| Brown stock | + Brown roux | = Brown sauce |
| Tomato plus stock | + (optional roux) | = Tomato sauce |
| Butter | + Egg yolks | = Hollandaise |

Source: *Professional Cooking*, W. Grisslen, Copyright © 1999 by John Wiley and Sons, Inc. Reprinted by permission of John Wiley and Sons, Inc.

⇨ *Table 23.1*

## Butter Sauces

Butter sauces may be made with cold butter or browned butter. Softened cold butter may be used alone or whipped with mustard, parsley, lemon juice, onion, garlic, or other flavorings. Cold butter sauces may be used immediately, or may be formed into thin rolls and refrigerated. A small amount of the roll may be broken off and placed on top of hot vegetables, shellfish, or bread. As the butter melts, it forms the sauce.

Browned butter may be light or dark, but when cooking, it should never be permitted to smoke. Particles resulting from browning should be discarded. In ***meuniere*** sauce, lemon juice and chopped parsley are added to lightly browned butter. Butter sauces are served over vegetables, seafood, and hot bread.

## Gravies

Gravies are meat-flavored sauces made from the drippings of roasted meat. They may be thickened or left unthickened. When meat is served ***au jus***, it is served "with the meat juices" or drippings. These drippings may be thickened to form a pan gravy. The drippings are usually diluted with stock. Variations of pan gravy include brown gravy, cream gravy, giblet gravy, onion gravy, and vegetable gravy. Pan gravies are served with meats and vegetables.

## Cold Sauces

Cold sauces are usually prepared with a tomato or mayonnaise base. They are similar to the dressings served on salads. Cold sauces may or may not require cooking.

Tomato-based sauces include seafood cocktail sauce and barbecue sauce. Tomato puree, ketchup, and chili sauce are common ingredients. They are served with meat and seafood.

Mayonnaise-based sauces include tartar sauce, dill sauce, mustard sauce, and remoulade sauce. Mayonnaise-based sauces are served with appetizers, hors d'oeuvres, dips, and salads.

Sweet-sour sauces are made from a base of fruit, fruit juices, or vinegar. They may be thickened with cornstarch. Sweet-sour sauces should be smooth and transparent. They should have a sweet, slightly tart, but not sour flavor. Sweet-sour sauces include chutney, raisin sauce, oriental sauce, and Polynesian sauce.

## *Sweet Sauces*

Desserts and some meats are served with sweet sauces. Sweet sauces may be served either hot or cold. Most sweet sauces can be categorized as whipped creams, sugar syrups, fruit sauces, hard sauces, or sweet egg sauces.

**Whipped Cream.** Whipped cream is an easily prepared sweet sauce. Chilled whipping cream is beaten until it forms soft peaks. It is usually sweetened with powdered sugar and flavored with vanilla. It must be served immediately.

Toppings, such as crushed candies or toasted nuts and cereals, may be added for variety. Whipped cream may be purchased in an aerosol can. Whipped cream substitutes are also available in cans, jars, as powdered mixes, and frozen in plastic containers.

**Sugar Syrups.** Sugar syrups are rich sauces like chocolate, butterscotch, and marshmallow. Other sugar syrups are flavored with fruit, vanilla, or maple. Sugar syrups are made by dissolving sugar and flavoring in water or milk and boiling until the desired thickness is reached. Most foodservice establishments buy canned ready-made sauces. A few prefer to make their own.

**Fruit Sauces.** Fruit sauces, such as lemon, orange, cherry, pineapple, raspberry, strawberry, peach, and apricot, are all popular. A simple fruit sauce can be made from a fruit puree, such as strawberries or raspberries. The berries are cooked in a small amount of water until soft and forced through a food mill. The puree is sweetened and served on ice cream or cake. Fruit purees are also used as garnishes for meat and poultry dishes. Orange puree may be served with duck, applesauce with ham, and cranberry puree with turkey.

To make a cooked fruit sauce, cornstarch is mixed with sugar, salt, and water before being added to the hot fruit juice. Lemon juice may be added after the mixture thickens. If added before, the acidity of the lemon juice can reduce the thickening power of the cornstarch. If whole or pieces of fruit are used in the sauce, they are added after the juice has thickened. Coloring may be added to make the sauce more appealing.

**Hard Sauces.** A hard sauce is made from butter, confectioner's sugar, eggs, vanilla, and flavoring. Hard sauce is about the texture of butter cream frosting. It is used as a topping for plum pudding, fruitcake, mince pie, gingerbread, or steamed pudding. A fluffy hard sauce is made by blending egg yolks into the butter and sugar. The egg whites are beaten separately until stiff, then folded into the sauce after it is prepared. Hard sauce is frequently flavored with extracts or liqueurs. A pastry bag is usually used to apply the hard sauce to the dessert.

**Sweet Egg Sauces.** The two most important sweet egg sauces are foamy sauce and egg custard. Foamy sauces are rich, uncooked sauces made with beaten egg whites, whipped cream, or both. They are also called supreme sauces. Foamy sauces are flavored with fruits, extracts, or liqueurs. Cooked strawberries, raspberries, or other juicy fruits may be mixed with these sauces.

Custard sauces are sweetened mixtures of milk and eggs. These sauces are thickened by the eggs or by eggs and starch. Vanilla is the most common flavoring, but chocolate, caramel, and other flavors are also well-liked.

Custard sauces should be the consistency of heavy cream and smooth and velvety. Custards are usually prepared in double boilers to prevent curdling.

Custard mixes are often used in foodservice. Some contain precooked starch and thicken instantly when milk is added, while others require cooking. Few foodservice establishments make custard from scratch. Custards spoil very quickly, therefore must be kept refrigerated except when serving.

### ◆ Essential Questions: ◆
### Sauces

1. How are the following sauces made?
    - brown sauce
    - tomato sauce
    - white sauce
    - cream sauce
    - egg sauce
    - butter sauce

2. What is pan gravy? How is it prepared?

3. What is a cold sauce? How is it prepared?

4. What is a hard sauce? How is it prepared?

## Chapter Highlights

- The basic stocks are white, brown, poultry, and fish. Convenience stocks can be purchased in powdered, granular, liquid, or cube form.
- Soups have either a stock or milk base. Thin soups include bouillon, consommé, and broth. Thick soups include vegetable, cream, and puree.
- Specialty soups are hearty soups meant to be served as meals. They may be made from a stock, milk, or a combination base.
- Cold soups are popular in the summer and include jellied consommé, gazpacho, vichyssoise, borscht, and fruit soup.
- Standard portion sizes for service of soup include 6 to 8 ounces for appetizer soups and 10 to 12 ounces for entrée or main course soups.
- Soups should be kept above 140°F or below 41°F. Unopened canned and dehydrated soups should be stored in a cool, dry place.
- A sauce is a richly flavored stock or liquid used to complement another food. It may become a part of a dish or be served as an accompaniment.
- Basic sauces are called foundation sauces. The basic sauces are brown sauce, tomato sauce, white sauce, cream sauce, egg sauce, and butter sauce. Other sauces include cold and sweet sauces.
- Gravies are meat-flavored sauces made from the drippings of roasted meat.
- Desserts and some meats are served with sweet sauces. These include whipped cream, sugar syrups, fruit sauces, hard sauces, egg sauces, and custard sauces.

# Chapter 24

## Salads

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

accompaniment salads
appetizer salad
base
binder
body
congeal
cooked dressings
croutons
dessert salads
dressing
emulsion
entrée salads
flavor enhancers
freeze-dried
French dressing
marinade
marinate
mayonnaise
permanent emulsions
reconstitute
rehydrate
salad bars
temporary emulsion
toppings
weeping

Salads add variety, crispness, color, and refreshing flavors to meals. Some salads are simple, some are elaborate. They usually contain combinations of vegetables, fruits, or both. A hearty salad includes protein foods, such as beans, peas, cheese, fish, meat, poultry, or eggs. Some salads are made with a gelatin base.

## TYPES OF SALADS

The three basic types of salads are combination, arranged, and molded. Each may be made with a variety of ingredients.

### ***Combination Salads***

Combination salads are made of pieces of food mixed together. Combination salads include green salads, vegetable salads, fruit salads, and cooked salads.

**Green Salads.** Tossed green salads are made of one or more types of salad greens. The greens for tossed salads are broken into small pieces. However, it is recommended that lettuce pieces be torn by hand when preparing a salad. A knife used to cut salad greens should have a narrow, pointed blade between 6 and 8 inches long. For best results, use a knife with a blade made out of one of the three following steels: (1) carbon steel–traditional favorite–holds an extremely sharp edge, (2) stainless-steel does not rust or corrode, but is harder to sharpen than carbon steel, and (3) high-carbon stainless-steel is a new alloy that combines carbon and stainless-steel, yielding a blade that will hold a fine edge, and does not rust, corrode, or discolor, but this knife is expensive. The greens should be dry, not wet. The salad may be flavored with herbs. The salad bowl may be rubbed with garlic for flavor. Dressings, salt, pepper, and other seasonings should be added just before serving or by the customer. Chopped egg, bacon bits, sliced salami, or Parmesan cheese may be used as garnishes. Tossed salads may be plated in the kitchen, or served from a large bowl of salad, or served at the table. Tossed salads are often featured on salad bars and tray lines.

**Vegetable Salads.** Vegetable salads are welcome changes from traditional tossed salads. Beets, celery, asparagus tips, beans, cauliflower, tomatoes, peas, and carrots are all popular ingredients for vegetable salads. The vegetables can be fresh, cooked, canned, or marinated, but should never be mushy. They may be served alone, arranged on a bed of lettuce, or tossed with salad greens. Appropriate garnishes for vegetables include hard-cooked eggs, chives, radishes, green or red peppers, olives, and parsley.

**Fruit Salads.** Peaches, apples, oranges, bananas, pineapple, melon, or grapefruit are some of the fruits commonly used in combination salads. Fruit-based combination salads include chicken Waldorf salad and a variety of fruit salads. Mayonnaise, French, or a sweet dressing may be used. Fruit salad may surround cottage cheese, be served on a bed of lettuce, or served in a small glass, dish, or bowl. Sometimes fruit salad is served in a scooped-out half of pineapple, grapefruit, or melon. Chopped nuts, cherries, or sprigs of parsley or mint make attractive garnishes for fruit salads.

**Cooked Salads.** Cooked salads are made from cooked foods. Many combinations of ingredients are possible in cooked salads. They may be made of vegetables, seafood, or meats. Some are a mixture of several ingredients. Cooked salads include potato salad, macaroni salad, tuna fish salad, and egg salad. The protein and starch foods used in cooked salads may be boiled, steamed, baked, or roasted. Vegetables are usually cooked whole, then cooled, cut, and blended with the dressing. Cooked salads may have a mayonnaise or another type of dressing. Some cooked salads are served hot; others are served cold.

## *Arranged Salads*

Sometimes salad ingredients are decoratively arranged on the salad plate. Ingredients for arranged salads include eggs, meats, cheeses, fruits, and vegetables. The ingredients should be artistically arranged, but should not appear stiff or contrived. Arranged salads include peach halves studded with cloves, a scoop of cottage cheese in a pineapple ring, or a fan of grapefruit and avocado slices. Garnishes, such as cherries or mandarin oranges, also may be part of the design.

## *Molded Salads*

Molded salads made with a gelatin base are popular. Either plain or flavored gelatin may be used. Fruit or vegetable juices, such as lime juice and tomato juice, may be used as the liquid which flavors gelatin. Tomato aspic is an example of a gelatin salad with a vegetable juice base.

A variety of foods may be combined with the gelatin. Pieces of fruits, vegetables, or meat can be mixed into the gelatin as it begins to thicken. For example, grated carrots may be added to lemon flavored gelatin. Leftover foods can be used in gelatin salads.

Gelatin salads can be prepared ahead of time. They can be molded in many sizes and shapes, such as a ring, star, fish, or pineapple. Layers can be made up of different colors. Whipped cream or mayonnaise can be combined with the gelatin. Molds can be decorated before filling so that when they are unmolded they have an attractive design.

### Convenience Salads

Production time and cost can be saved in foodservice by using convenience ingredients or convenience salads. Many convenience ingredients are available. Washed salad greens and shredded cabbage may be purchased. Bags of prepared tossed salad and spinach salad can be purchased. Already prepared fruits are also available. Canned, frozen, dehydrated, and freeze-dried items can save time and energy as will fresh accompaniment salads from delicatessens. Ready-to-use salad dressings and packaged salad dressing mixes are other time savers.

Convenience salads are available in several forms. Prepared salads, such as gelatin, coleslaw, macaroni, potato, or fish, may be purchased. Placed on a base of greens, these salads are ready to serve. The newest convenience salads are freeze-dried salad mixes. The mixes require only the addition of water. Even the dressing is included. Freeze-dried salad mixes include egg, ham, shrimp, and tuna. These mixes do not require refrigeration until after the water is added.

**◆ Essential Questions: ◆**
**Types of Salads**

1. What are the three basic types of salads? Give examples of each.
2. What is a cooked salad?
3. What type of convenience salads are available? How are they used in foodservice?

## MENU USES OF SALADS

In foodservice, salads are usually classified according to their menu use. Salads may be served as appetizers, entrées, accompaniments, or desserts.

An ***appetizer salad*** is served at the beginning of a meal. Appetizer salads are small, colorful, tasteful, light salads which whet the appetite for the rest of the meal. Appetizer salads are often served with a highly seasoned dressing. The ingredients may be marinated. To ***marinate*** means to soak food in a marinade for several hours. A ***marinade*** is a mixture of liquids and seasonings. Marinating allows the food to absorb the flavor of the marinade.

***Entrée salads*** are hearty salads served as the main course of the meal. They are especially popular at lunch. Entrée salads often include meat, poultry, fish, cheese, or eggs as ingredients. Hearty salads can also be made with kidney beans, potatoes, rice, or macaroni. These salads may be featured on the menu with soup, sandwiches, bread, or rolls.

## Menu Uses of Salads

| Type Salad | Examples |
|---|---|
| Appetizer | Fruit salad<br>Marinated shrimp on lettuce<br>Melon and avocado slices on watercress<br>Mushrooms, green pepper, and cauliflower<br>Orange and grapefruit sections on spinach leaf |
| Entrée | Chef's salad<br>Fruit plate with yogurt or cottage cheese<br>Tuna or chicken salad<br>Tomato stuffed with egg salad<br>Spinach salad with chopped egg and bacon |
| Accompaniment | Mixed vegetable or garden salad<br>Mixed fruit on lettuce<br>Cole slaw<br>Pineapple-carrot salad<br>Fruit in gelatin<br>Three-bean salad |
| Dessert | Frozen fruit salad<br>Molded fruit salad<br>Mixed fruit salad<br>Melon wedges |

⇨ ***Table 24.1***

***Accompaniment**,* or side dish, ***salads*** are served with the main course of the meal. They are usually larger than an appetizer salad, but not as large or hearty as an entrée salad. Accompaniment salads may be lighter if served with a heavy entrée and heavier if served with a light entrée. If served before the main course, they act as both appetizer and accompaniment. Accompaniment salads should be light and refreshing. They are usually made with fruits and vegetables or may be only greens. Accompaniment salads do not usually include meat, poultry, or fish, but they often include small amounts of cheese or eggs.

***Dessert salads*** are colorful and attractive endings for meals. They are sweet and light. The main ingredient is usually fruit, and nuts are often included. Dressings are usually sweet. Dessert salads, especially those made with gelatin, are likely to be topped with whipped cream or whipped cream topping. Refer to Table 24.1 for examples of salads.

***Salad bars*** are popular in many types of foodservice establishments. Salad bars attractively present a variety of salad ingredients and salads along with a choice of dressings and toppings. Customers may choose the ingredients or salads they want and add the dressing and toppings of their choice. Foodservice operators find salad bars profitable because they save the labor cost of making individual salads in the kitchen.

Salad bars vary from simple to elaborate. Simple ones may offer only salad greens, a few chopped vegetables, canned vegetables, and two or three dressings. A more elaborate salad bar may include thinly sliced meat, fish, poultry, eggs, a variety of cheeses, and a selection of prepared salads. The ingredients and salads presented in the salad bar should appear fresh and appealing. Vegetables should be crisp, never dry or wilted.

Salads and salad ingredients may be placed in pans or bowls in a salad bar. Containers and utensils should be neither too large nor too small. It should be easy to remove the food without knocking any out or having to chase the food around the container. Appropriate utensils should be provided, such as slotted spoons for draining juice from foods, solid spoons for foods without juice, and tongs for items which may be picked up one at a time. A sneeze guard should protect the items on the salad bar from contamination by customers.

**◆ Essential Questions: ◆**
**Menu Uses of Salads**

1. Why are salad bars popular with consumers?
2. What are accompaniment salads? How are they used in foodservice?

## PARTS OF A SALAD

Salads have three basic parts. These parts are the base, the body, and the dressing.

### Base

The ***base*** or underliner refers to the foundation of the salad. It is usually a leafy green vegetable, like lettuce. Many different greens may be used for the base of a salad. Lettuce is the most popular base, but endive, escarole, and spinach are also used. Other items, such as cottage cheese, may also be used as the salad base. The base of the salad keeps the plate from looking bare and adds contrast in color and texture.

### Body

The main part of the salad is called the ***body***. The name of the salad often describes the body of the salad. For example, mixed vegetable, fruit, tuna or chicken salad are named for the primary ingredient of the salad's body. The salad body may be made of protein foods, such as meat, fish, poultry, cheese, or eggs, or it may be composed of vegetables or fruits. A combination of ingredients is often used.

### Salad Dressings

The third part of the salad is the ***dressing***. The dressing adds flavor and tartness to the salad. There are three basic types of salad dressing – French, mayonnaise, and cooked dressings.

***French dressings*** have an oil base. They may be thin or thick depending on whether or not a binder is used. Vinegar and oil French dressings are thin dressings. They form only temporary emulsions. An ***emulsion*** is a suspension of droplets of oil in a liquid. An Italian type dressing is an example of a ***temporary emulsion***. On standing, the oil separates from the liquid. When a ***binder*** or emulsifying agent is added, the oil is held permanently in suspension, and the dressing remains thick and creamy. Egg yolks and gelatin are used as binders to create creamy dressings which are

***permanent emulsions***. French dressings are used on greens, vegetables, and fruits.

Oil and vinegar are important ingredients in most salad dressings. Oil improves the appearance of the salad by adding gloss. It also makes the salad more palatable by making it slightly slippery. Salad oil should be light, fresh-tasting, and high quality. When oil deteriorates because of warmth, light, or age, it acquires a rancid taste. For salads, vegetable oils from corn, cottonseeds, and peanuts are preferred. They have a sweet, bland taste and do not spoil easily. Olive oil, an oil with a distinctive taste, also may be used, but it is expensive and becomes rancid easily.

Vinegar adds tartness or acidity to a salad. Popular vinegars for salads include cider vinegar, wine vinegar, and white vinegar. Vinegar may be seasoned with herbs such as tarragon. Lemon juice is sometimes substituted for vinegar or used with vinegar in making salad dressings.

***Mayonnaise*** is a thick, smooth dressing made with a permanent emulsion of eggs, oil, vinegar, and seasonings. It must be spooned rather than poured. It is used with meat, fish, poultry, cooked vegetables, and some fruit salads. It may be mixed with chopped onion, eggs, cheese, and chopped pickle.

***Cooked dressings*** are thick and tart. They are thickened with egg, cornstarch, or flour instead of an oil emulsion. Cooked dressings are used in potato salads, coleslaw, and many meat, poultry, and fish salads.

### ◆ Essential Questions: ◆ Parts of a Salad

1. What are the three basic parts of a salad? Give examples of each part.
2. Why are salad dressings classified as emulsions?

## PREPARING AND STORING SALAD INGREDIENTS

Almost any raw, cooked, or canned vegetable or fruit can be used to make a salad. Cooked or canned meat, poultry, or fish can be added for variety. Small amounts of leftover food can also be used in salads.

### Greens

Greens may be used in the body of the salad as well as in the base. They may be used alone or combined with other ingredients. The most commonly used salad green is iceberg lettuce. Other frequently used lettuces include butterhead, Bibb, romaine, curly endive, and escarole. Other leafy vegetables used in salads are turnip and mustard greens, spinach, regular or red cabbage, and Chinese cabbage.

Wash, drain, and crisp salad greens before using them. Wash salad greens carefully and thoroughly in cold running water to remove dirt and insects. Remove the tough stems, older ribbed outer leaves, and any bruised or wilted leaves. Always handle greens gently to prevent bruising. To clean the lettuce, remove the core by hitting the core end sharply on the counter, then twisting the core to remove it. Run water into the area where the core was removed and separate the lettuce leaves. Turn the core end down and drain. Drain greens in a colander or on paper towels. To crisp salad greens, store tightly covered in the refrigerator, or cover with a towel and ice. Do not pack the greens so tightly that they become bruised.

Greens are expensive. Plan ahead to ensure the best use. Use outer leaves for cups. Save the inner leaves for tossed salads.

All salad greens are fragile and must be handled with care. They bruise and discolor easily. Hand tearing or using stainless steel cutlery prevents discoloration. Commercial

**Vegetables Used in Salads**

| Raw Vegetables |
|---|
| • Bean sprouts<br>• Broccoli<br>• Cabbage, white, green and red<br>• Carrots<br>• Cauliflower<br>• Celeriac (celery root)<br>• Celery<br>• Cucumbers<br>• Jerusalem artichokes<br>• Jicama<br>• Kohlrabi<br>• Mushrooms<br>• Onions and scallions<br>• Peppers, red, green, and yellow<br>• Radishes<br>• Tomatoes |
| **Cooked, Pickled, and Canned Vegetables** |
| • Artichoke hearts<br>• Asparagus<br>• Beans (all kinds)<br>• Beets<br>• Carrots<br>• Cauliflower<br>• Corn<br>• Cucumber pickles (dill, sweet, etc)<br>• Hearts of palm<br>• Leeks<br>• Olives<br>• Peas<br>• Peppers, roasted and pickled<br>• Pimentos<br>• Potatoes<br>• Water chestnuts |

***Table 24.2***

products are also available to prevent discoloration. Refrigerate greens to prevent wilting.

## *Vegetables*

Many types of vegetables are used in salads. Table 24.2 lists raw, cooked, pickled, and canned vegetables that are used in salads. Either fresh, frozen, cooked, canned, or dehydrated vegetables may be used. Because appearance is so important in salads, only the highest quality vegetables should be used. They should be firm, colorful, free from obvious blemishes, and show no signs of rot or decay. Wilted vegetables are unsuitable for use in salads.

When preparing vegetables, be careful to preserve taste and texture. Remove the inedible parts of vegetables. Be sure they are free from defects.

To prepare vegetables, such as carrots and celery, wash thoroughly using a brush if needed, pare them if necessary, and cut them into desired shapes. Raw vegetables may be sliced, diced, chopped, shredded, or grated. Use a sharp, stainless steel knife to cut vegetables to avoid bruising them during preparation. To remove the skins of whole tomatoes, dip them briefly in boiling water until skins are loosened, and then dip the tomatoes in cold water. Skin may then be easily removed by hand.

To prepare cooked vegetables for salad use, cook the vegetables until just done. Overcooking causes loss of nutrients, color, and desired texture. Drain cooked or canned vegetables well before using.

To prepare dehydrated or dried vegetables for salad use, prepare or ***reconstitute*** (restore to liquid state by adding water) according to manufacturer's directions. Sweet and white potatoes, peas, beans, carrots, and onions are some of the dehydrated vegetables that can be used in salads.

Store vegetables in the refrigerator if they are not needed immediately. For best results, place them in a container and cover them with a clean, damp cloth or plastic wrap before refrigerating. If vegetables are not as crisp as desired, enclose them in a plastic bag with a small amount of ice and refrigerate for a few minutes.

**Fruits Used in Salads**

| Fruits (fresh, cooked, canned, or dried) |
|---|
| Apples |
| Apricots |
| Avocados |
| Bananas |
| Berries |
| Cherries |
| Coconut |
| Dates |
| Figs |
| Grapefruit |
| Grapes |
| Kiwi Fruit |
| Mandarin orange |
| Mangos |
| Melons |
| Oranges |
| Papayas |
| Peaches |
| Pears |
| Peersimmons |
| Pineapple |
| Plums |
| Pomegranates |
| Prunes |
| Raisins |

***Table 24.3***

## Fruits

Salads may include raw, cooked, canned, or dried fruits as ingredients. Table 24.3 lists fresh, cooked, canned, or dried fruits that may be used in salads. Frozen fruits are seldom used in salads because they become mushy when defrosted. Pre-prepared citrus slices are used in many institutions and restaurants to save preparation time. Only high quality fruits should be used in making salads. Fruits should be firm, juicy, flavorful, and free from blemishes.

Fruits should be washed thoroughly before using. Decayed fruits should be discarded. Berries should be washed carefully to remove soil, then drained. To prevent loss of water-soluble vitamins and minerals, do not soak fruits in water.

Some fruits, such as bananas, apples, peaches, pears, and avocados, turn dark when peeled and cut surfaces are exposed to air. Dip these fruits in an ascorbic acid solution to prevent darkening. Use lemon juice, fruit juice, vinegar and water, citric acid and water, or a commercially prepared product. Remove inedible seeds, skins, and stems from all salad fruits.

Drain and chill canned fruits before using in salads. Save the juices for use in gelatin salads or fruit punches. Soak dried fruits to ***rehydrate*** or restore the moisture removed by drying.

After preparation, store fruits in the refrigerator in tightly covered containers.

## Protein Foods

Protein foods, such as meat, poultry, fish, cheese, and eggs, are used in main course salads. Sometimes leftover protein foods are used in making salads.

**Meat, Poultry, and Fish.** The meat, poultry, or fish used in salads may be freshly cooked, canned, or freeze-dried. ***Freeze-dried*** products are first frozen, and then the water is evaporated. Freeze-dried products require no refrigeration and take little storage space. Meat, poultry, and fish often are marinated in vinegar and oil with spices and herbs.

Meat, poultry, and fish may be diced, sliced, or cut in strips. Pieces should be bite-sized and easily recognizable. Sanitize the cutting or chopping board before use to prevent contamination of these protein foods. Protein foods mixed with mayonnaise should be handled carefully to prevent bacterial contamination.

**Eggs.** Only top-quality eggs are suitable for use in salads. Choose large eggs for slicing or stuffing. Smaller eggs may be used for chopping. Keep eggs under refrigeration before and after cooking.

To prepare hard-cooked eggs, first bring eggs to room temperature. The eggs are less likely to crack when placed in boiling water if they are room temperature. Lower the eggs in a wire basket slowly into boiling water. Reduce the heat to below boiling and cook 12 minutes or until eggs are just hard. Cool immediately under cold running water. Overcooking and failure to cool immediately causes the white to toughen and the yolk to develop a greenish ring on the outermost part.

Eggs should be shelled immediately after cooking. Crack the larger end first and peel under cold running water. If the shell sticks, use a teaspoon to remove the egg from the shell.

**Cheese.** Popular cheeses for use in salads include cottage, blue, Roquefort, and Parmesan cheese. Cottage cheese is an unripened cheese which combines well with vegetables or fruit. Blue, Roquefort, and Parmesan cheese are some of the ripened cheeses popular in salads. Ripened cheeses have a sharp, distinctive flavor that adds to the taste of a salad. They may be grated and crumbled on the salad as a topping, or blended into the dressing. Cubes or strips of cheese may be mixed with other ingredients in the body of the salad.

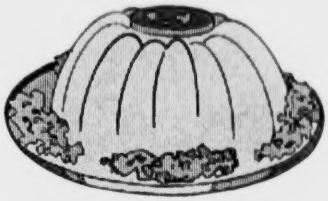
Most cheeses require refrigeration. Cottage cheese is especially perishable. Most ripened cheeses will keep for months if refrigerated in airtight containers. Parmesan, a hard dry cheese, may be kept in dry storage.

## Starches

Complex carbohydrates or starchy foods also may be used in salads. These foods include dried beans (cooked or canned), potatoes, macaroni products, rice, and bread (croutons).

## Gelatin

Molded salads are made with a gelatin base. The gelatin may be either plain or flavored. Gelatin may be purchased either in granular form or in sheets. When dissolved in water, it makes the liquid ***congeal*** or thicken and become solid when cold. Gelatin may be used alone or with fruits, vegetables, or meats.



Gelatin can be molded into many shapes. Molded, ready-to-eat gelatin salads can be purchased commercially to save preparation time.

To prepare gelatin, use a small amount of hot liquid to dissolve the gelatin. The hot liquid must be at least 95°F, but boiling water is best. Unflavored gelatin must be soaked for five minutes in a small amount of cold water before being dissolved in hot water. Fruit flavored gelatin does not require soaking. After the gelatin is completely dissolved, add cold liquid to help the mixture to gel more quickly.

To speed the setting process, add part of the hot water to dissolve the gelatin, and stir with a wire whip to ensure that the gelatin dissolves thoroughly. Instead of using the remaining hot water, use ice water. Add crushed ice instead of cold water or liquid. Remove any large pieces of ice that do not melt. Stir until all the ice is dissolved. Mold in a flat pan and refrigerate. The salad will congeal almost instantly.

Wait until the gelatin begins to set before adding solid foods, such as shredded carrots, cabbage, or fruits. This will prevent the solid foods from sinking to the bottom or rising to the top. When solid foods are added or the gelatin is molded in a large pan, adding additional plain gelatin helps the gelatin hold up and prevents ***weeping*** (seeping of liquid from the gelatin as it stands). For a firm gel, use 1 1/2 lb. of flavored gelatin and 2 1/2 oz. of plain gelatin per gallon of water.

Gelatin must be kept refrigerated until nearly serving time. Unmold the salad just before serving. To unmold, fill a sink or pan with hot water. The container must be large enough to hold the mold. Place the serving plate nearby. Dip the bottom of the mold into hot water for about thirty seconds. Shake the mold to see if the gelatin moves. When the gelatin has loosened, remove the mold from the water. Dry the outside of the mold. Place the serving plate on top of the mold. Turn the mold and plate over quickly. Tap the mold slightly on the top and remove. The gelatin should come out of the mold easily. Place the salad in the refrigerator until served.

Gelatin salads are often molded in a large, flat pan. The gelatin is then cut into servings. Cut the gelatin lengthwise and crosswise to form the number of servings designated. Use a spatula which has been dipped in hot water to remove the gelatin from the pan.

### Flavorings

Additional flavor is added to salads by ***flavor enhancers***. The best known flavor enhancer is salt. Monosodium glutamate is a flavor enhancer which brings out the flavor in other foods, though it has no flavor of its own.

Onion and garlic are other popular flavor enhancers. Green, Bermuda, and Spanish onions are used most often in salads. They may be sliced, diced, or chopped. Garlic is peeled and chopped. Because it has a strong flavor, the salad bowl may be just rubbed with garlic. Sometimes, garlic is browned in a small amount of salad oil, then added to the salad.

Herbs and spices also add flavor to salads. Popular salad herbs include parsley, horseradish, mustard, and mint. Pepper and paprika are examples of spices used in salads. Mixtures of herbs and spices made specifically for use in salads are available. Herbs and spices should be used sparingly in salads. Their flavor should enhance, not dominate, the taste of the salad.

**◆ Essential Questions: ◆**
**Preparing and Storing Salad Ingredients**

1. When used in salads, what are the use, care, and storage practices for each of the following?
    - greens
    - vegetables
    - fruits
    - protein foods
    - gelatin
2. What are three popular flavor enhancers?

## SALAD PRODUCTION

Organization is the key to salad production. Many salad ingredients can be prepared in advance and stored in the refrigerator. Molded salads should be prepared 24 hours ahead. Early preparation allows plenty of time for the gelatin to set. Greens should be washed and prepared for serving several hours before the mealtime. Other vegetables and fruits should also be prepared in advance. All garnishes should be prepared in advance.

In preparing the salad, work quickly so the unrefrigerated ingredients do not wilt. To prevent bruising, do not over-mix the ingredients. For sanitation and to preserve crispness, keep salad ingredients cold. To prevent loss of crispness, add the dressing as close to serving time as possible. Arrange the ingredients simply, but artistically. Garnish the salad attractively. Serve cold salads well-chilled and possibly even on a chilled plate.

The organization of the salad station will depend on the number of salads to be prepared and the number of different salads on the menu. One section of the salad station may be used for preparation of individual salads and appetizers and another for dishing salads from a bowl or pan. More room and more workers are needed to prepare a large quantity of salads.

### Salad Assembly

Follow these guidelines when assembling salads:

- Get out all the tools and equipment needed.
- Assemble all recipe ingredients.
- Set up a production line for the appropriate number of salads and workers.
- Assemble the salads as instructed, using the correct portions.
- Refrigerate the salads until the serving time.

### Salad Arranging

Follow these guidelines when arranging salads:

- Keep the salad off the rim of the plate.
- Strive for a good balance of colors.
- Height helps make a salad attractive.
- Cut ingredients neatly.
- Make every ingredient identifiable.
- Keep it simple.

When several workers work together to form a production line, each one is responsible for a particular operation. For example, the first worker might pick up the plate and add the salad base. The second worker might place the body of the salad on the base. The third worker might add the dressing and garnishes and place the completed salad on a salad cart. The cart should be refrigerated when full.

When one worker assembles the salads, the ingredients and tools are usually placed to the worker's left. The salad plates are arranged individually on the counter. The worker uses both hands to pick up the salad base and place it on the plates. Then the body of each salad is placed on the base and the dressing, if any, is added on top of the body. The salads are garnished. Finally, the salads are placed on a cart and refrigerated. Two workers can work from the same supply of dishes by working on opposite sides of the table.

**◆ Essential Questions: ◆**
**Salad Production**

1. What are the guidelines for assembling salads?
2. What are the guidelines for arranging salads?

## SERVING, GARNISHING, AND STORING SALADS

Salads may be served in the kitchen or from a salad cart or salad bar. For cold salads, both ingredients and serving plates should be chilled. Hot salads should be served hot.

### Garnishes

Salads should be simply garnished with edible garnishes. Garnishes should complement both the flavor and color of the salad.

Many of the ingredients used in preparing salads are suitable garnishes. Vegetables in interesting shapes such as wedges, rings, curls, and strips are used as salad garnishes. Whole or halved fruits and berries are also appropriate garnishes for salads.

A variety of foods can be used as toppings for salads. ***Toppings*** add flavor and make a salad crunchy. Popular toppings include freshly ground black pepper, crisp bacon and ham bits, sunflower seeds, grated cheese, hard cooked eggs, and croutons. ***Croutons*** are small, toasted cubes of bread which are usually seasoned for added flavor. Products that imitate the flavor of bacon and ham bits may be used in place of natural bacon or ham. Whipped cream may be used as a topping for a fruit or flavored gelatin salad.

## Holding and Storing Salads

Salad greens are very perishable. After washing, they should be drained well and allowed to dry to avoid spoilage by excess water. Washed greens should be stored in a covered container or moisture-proof wrap in the refrigerator. To avoid bruising, salad greens and other vegetables should be handled gently.

Salad dressings should be stored in tightly covered containers in the refrigerator. The dressings should not be frozen. Very cold temperatures may cause mayonnaise to separate and French dressing to become cloudy.

Salads prepared in advance should be stored in tightly covered containers in the refrigerator. This will prevent drying or odor absorption. Leftover salads which include protein foods should be discarded. These foods should be kept out of the temperature danger zone (41° - 140°F) as much as possible. Protein foods and foods containing mayonnaise are especially likely to become contaminated with bacteria. For this reason, they are frequently responsible for causing foodborne illness.

### ◆ Essential Questions: ◆
### Serving, Garnishing, and Storing Salads

1. What are two examples of salad garnishes?
2. How should salad greens be stored?

## Chapter Highlights

- Salads add variety, crispness, color, and refreshing flavor to meals. They may be served as appetizers, entrées, accompaniments, or desserts. Salad bars are also popular.
- The three basic types of salads are combination, arranged, and molded. Each can be made with a variety of ingredients.
- Combination salads are made of pieces of food mixed together. Combination salads include green salads, vegetable salads, fruit salads, and cooked salads.
- Molded salads are made with either plain or flavored gelatin. A variety of foods may be combined with the gelatin.
- The three basic parts of a salad are the base, the body, and the dressing.
- The base refers to the foundation of the salad and is usually a leafy green vegetable. The name of the salad often describes the body and is the main part of the salad. The dressing adds flavor and tartness to the salad.
- The three basic types of salad dressings are French, mayonnaise, and cooked.
- Salad greens are expensive and should be handled carefully to prevent bruising. Before using, they should be washed, drained, and allowed to dry. They then need to be covered and refrigerated to prevent wilting.
- Plain or flavored gelatin may be used to mold salads and should complement both the flavor and color of the salad.
- Oil and vinegar improve the appearance of a salad by adding gloss and tartness or acidity to it.
- Flavor enhancers add additional flavor to salads. Popular flavor enhancers include salt, monosodium glutamate, onions, garlic, herbs, and spices.
- The key to salad production is organization. Ingredients should be kept at the proper temperature and handled carefully to prevent loss of crispness and prevent bruising.

# Chapter 25

## Sandwiches

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

club or decker sandwiches
dry fillings
filling
moist fillings
open-faced sandwiches
production line
pumpernickel bread
quick breads
regular sandwiches
rye bread
salmonella contamination
specialty sandwiches
spread
stale bread
tea sandwiches
whole wheat bread

Sandwiches are one of the most popular foods sold in foodservice. They are sold at sandwich counters, in vending machines, in fast-food establishments, and in seated-service restaurants. Sandwiches are especially popular at lunch, but are also eaten for dinner and snacks. Breakfast sandwiches have recently gained popularity.

Sandwiches are quick, filling, and easy to eat. They may be hearty enough to be a meal or snack by themselves, or they may be served with other foods, such as french fries, vegetables, or salads, to complete a nutritious meal. Small sandwiches may be used as appetizers or party refreshments.

## TYPES OF SANDWICHES

The types of sandwiches differ mostly in the number of slices of bread each use. The three most common types of sandwiches are regular, open-faced, and club or decker.

***Regular sandwiches*** are made with two slices of bread. Small regular sandwiches may be called ***tea sandwiches***. ***Open-faced sandwiches*** have only one slice of bread. Very small open-faced sandwiches are called canapés (a type of hors d'oeuvre or appetizer). ***Club*** or ***decker sandwiches*** have at least three slices of bread, and ***specialty sandwiches*** are usually made with a special bread, such as a hot dog bun, a hamburger bun, an English muffin, a bagel, a croissant, a hard or soft roll, pita (pocket) bread, or foccacia. Examples of specialty sandwiches include submarine (poor boy, hoagie, grinder, or hero), croissant, and pocket sandwiches.

Hot sandwiches vary from hamburgers and hot dogs to open-faced hot sandwiches which include a sauce, gravy, or cheese topping. Grilled cheese, a toasted sandwich, is another popular hot sandwich. There are also deep-fried sandwiches which are cooked on a griddle or in a hot oven. Deep-fried sandwiches are dipped in beaten egg before heating.

◆ ***Essential Questions:*** ◆
***Types of Sandwiches***

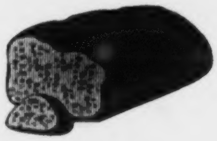
1. What are the three most common types of sandwiches? Describe and give examples of each one.
2. What are specialty sandwiches? Give two examples.
3. Why are sandwiches popular with Americans?

## PARTS OF A SANDWICH

Most sandwiches include three parts: bread, spread, and filling.

### ***Bread***

Bread for sandwiches may be either yeast or quick bread. White yeast bread is the most popular sandwich bread available in pullman or sandwich loaves. Other popular yeast breads include ***whole wheat***, ***rye*** (both light and dark), and ***pumpernickel***. Soft yeast rolls are used for hot dogs and hamburgers. Crusty yeast rolls are often used for specialty sandwiches as are special breads, such as croissants.



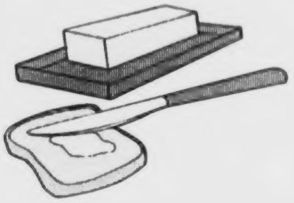
***Quick breads*** are breads that use fast-acting leavening agents, such as baking powder or baking soda, to leaven the batter or dough. Quick breads popular for sandwiches include Boston brown bread, nut bread, and fruit bread. Quick breads are especially popular for sweet sandwiches. Dainty tea sandwiches made with quick breads are frequently served with a sweet salad for lunch.

To make good sandwiches, bread must have several characteristics:

- Bread not too fresh, nor too old (stale). Day-old bread is best. Fresh bread may tear when spread with filling or the sandwich may become soggy. ***Stale bread*** is dry and often has an off-flavor. Refrigeration tends to make bread hard and to become stale easily.
- Bread should have a uniform shape. Each slice should be the same size and shape.
- Bread should have a firm, velvety texture. It should not crumb or tear easily.
- To prevent staleness, have bread delivered as frequently as possible and keep bread tightly wrapped in moisture-proof wrapping.

## Spread

A ***spread*** is a thin coating used on one side of the sandwich bread. The spread helps seal the surface of the bread to prevent the sandwich filling from soaking into the bread. It helps keep the bread from drying out, and adds flavor to the sandwich. Sometimes a spread is used alone, especially for canapés.



The most common spreads are butter, margarine, and mayonnaise. Butter and margarine are the best choices for sandwiches held in advance of serving. Mayonnaise should be spread on the bread as close to serving time as possible so that the bread will not become soggy. Other spreads include cream cheese, spiced butter, peanut butter, and mustard.

Butter, margarine, or mayonnaise may be used alone or blended with other ingredients. Additional flavor may be added by mixing one of these spreads with sauces like mustard, ketchup, or chili sauce. Minced onions, garlic, horseradish, pickles, fish, or ham also add flavor to spreads. Sandwiches made with mayonnaise need to be refrigerated to prevent foodborne illness.

## Filling

Sandwich ***fillings*** are ingredients placed between the slices of bread or on the bread of an open-faced sandwich. Sandwiches are often named for their fillings. Chicken salad, salami, and cheese are examples of sandwich fillings.

Sandwich fillings may be dry or moist. ***Dry fillings*** include thin slices of meat, poultry, fish, or cheese. Popular cheeses used for sandwiches include cheddar, Swiss, and provolone. A thin slice of tomato or onion, sliced pickles, and a lettuce leaf may be placed on top of the meat or cheese.

***Moist fillings*** are made from finely chopped meat, chicken, turkey, fish (such as tuna), or cheese. Chopped celery, onion, cucumber, pickles, or nuts may be added for texture. Moist fillings usually are held together with mayonnaise. Moist fillings include chicken salad, ham salad, and tuna salad. Lettuce may be placed under the top slice of bread.

Special precautions must be taken when preparing, holding, and serving moist fillings. Fillings should be mixed under sanitary conditions, and ingredients should be refrigerated until ready to use. Moist fillings should not stand at room temperature for more than three hours. Only the amount of filling that can be used promptly should be removed from the refrigerator. These precautions should prevent ***salmonella contamination***. Salmonella is a toxic bacteria which can cause various diseases in people, including food poisoning.

**◆ Essential Questions: ◆**
***Parts of a Sandwich***

1. What are the three parts of a sandwich?
2. What are four characteristics of bread that make it suitable for sandwiches?
3. What is the purpose of spreads?

## SANDWICH PREPARATION

Preparation of sandwiches involves two main steps – preparing the parts of the sandwich and assembling the sandwich.

### Preparing Sandwich Parts

All sandwich ingredients should be prepared and chilled before making the

## Assembling Sandwiches

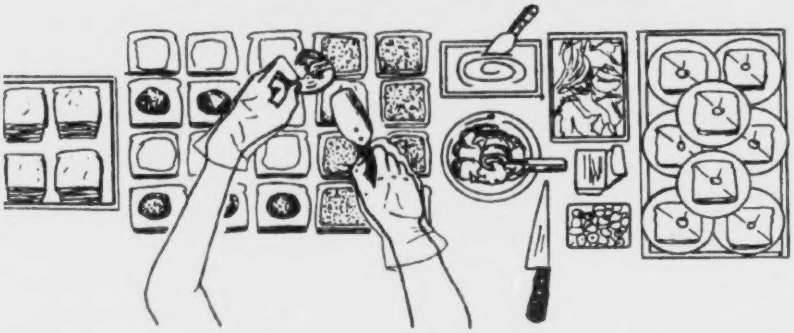


Figure 25.1

sandwiches. For moist sandwiches, prepare and refrigerate the filling in advance. Butter should be softened (by briefly leaving out at room temperature before use) and spreads prepared. Meat and cheese should be sliced for dry sandwiches, and lettuce should be washed, drained, and torn to the correct size. Any garnishes and accompaniments should be prepared.

### Assembling the Sandwich

Whether sandwiches are to be prepared one-at-a-time on order or in quantity, a well-organized and equipped sandwich preparation center is essential. Before sandwiches are assembled, the work area must be organized. All needed tools and utensils should be assembled, including the following:

- trays
- containers
- knives
- spatulas
- scoops
- plastic gloves
- sandwich wraps
- toothpicks
- Equipment necessary for preparing hot sandwiches, such as griddles, grills, broilers, deep fryers, and microwave ovens.

Food items should be assembled next, such as:

- prepared, chilled ingredients
- bread
- softened spreads
- fillings
- garnishes

Bread wrappers should be slit in the center (lengthwise) with a sharp knife. Only the amounts of the ingredients that can be used promptly should be removed from refrigeration and placed in the sandwich preparation center. Extra ingredients should remain in the refrigerator.

Tools, utensils, and ingredients should be prearranged for maximum efficiency. Right-handed workers should arrange items so the flow of work is from left to right. Left-handed workers should arrange items so that the work flow will be from right to left.

The work area can be arranged for one worker or for several workers. When several workers help assemble sandwiches, the work is done in a ***production line***. Each worker does certain tasks. Figure 25.1 shows how the work area might be arranged for one worker and for a production line. Refer to Table 25.1 for the steps in preparing sandwiches.

### Steps to Making Sandwiches

1. Take top slices of bread from two bread stacks.
2. Using a spatula, place spread on both slices of bread.
3. Measure one scoop of moist filling. Place in center of bread slice on right.
4. Using a spatula, spread filling evenly to edges of bread.
5. Cover filling with lettuce leaf.
6. Cover with other slice of bread.
7. Cut sandwich diagonally using a sawing motion.
8. Move plate to center.
9. Place sandwich on plate.
10. Add garnish and accompaniments.

***Table 25.1***

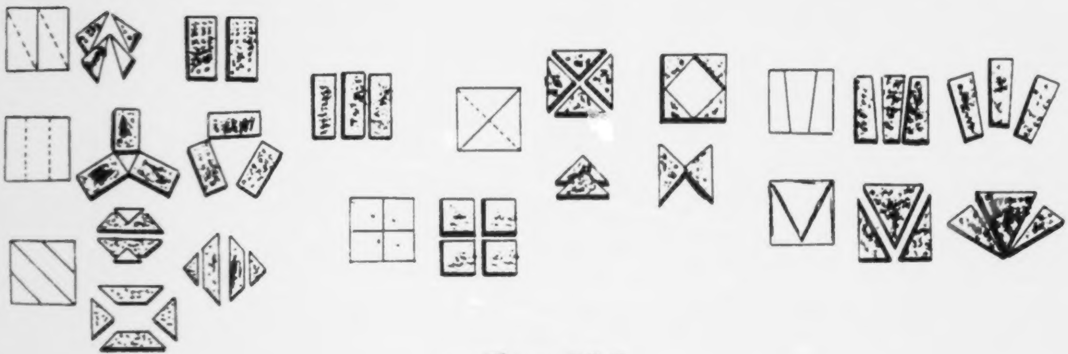
When making sandwiches in quantity, two or more workers can form a production line for assembling the sandwich parts. When this is done, the steps might be divided as follows:

- The first worker spreads the first slice of bread and adds the filling.
- The second worker adds lettuce, spreads the top slice of bread, and adds the top slice to the sandwich.
- The third worker, if needed, cuts, garnishes, and wraps the sandwiches.

The organization of the work area should be similar. However, a larger work area will be needed for two or three workers. Facilities which frequently make sandwiches in quantity may use a slow-moving continuous belt to move the sandwiches from one worker to the next.

## Cutting Sandwiches

Sandwiches may be cut in a variety of shapes. The cut sandwiches should be arranged attractively on the serving plate. Ways to cut sandwiches and arrange them in an eye-appealing manner are shown in Figure 25.2.



***Attractive Ways for Cutting and Arranging Sandwiches***

*Figure 25.2*

**◆ Essential Questions: ◆**
**Sandwich Preparation**

1. Which tools are needed at a sandwich preparation center?
2. What is the difference in work flow for a right-handed worker and a left-handed worker?

## GARNISHING, SERVING, AND STORING SANDWICHES

A variety of edible garnishes can be used on sandwiches. The garnish should be suitable in texture, form, color, and flavor. Garnishes frequently used with sandwiches include parsley, lettuce, tomato slices, celery, carrot sticks, green pepper, cucumber slices, radishes, egg slices, pickles, olives, and relishes. For sweet sandwiches, apricot halves or pineapple sticks or rings might be used.

Regular sandwiches are garnished simply. The garnish may be held on top of a sandwich by a toothpick or placed to the side. Open-faced sandwiches require more elaborate garnishes. Stuffed sliced olives, chopped bacon, green pepper strips, radish roses, or carrot curls are suitable garnishes on open-faced sandwiches.

Sandwiches should be served attractively. Garnishes may fill the empty space on the plate, making the sandwich more appetizing. In addition, cold sandwiches are frequently served with french fries, potato chips, potato salad, cole slaw, sauerkraut, stuffed eggs, or sliced tomatoes.

### Holding and Storing Cold Sandwiches

Wrap sandwiches in moisture-proof wrapping. Place in sandwich bags, or cover pans or trays with moisture-proof wrapping and a damp towel. Label sandwiches for easy identification, and place the pan in refrigerator until service. Refrigerate sandwiches which are not to be used immediately.

### ◆ Essential Questions: ◆
### Garnishing, Serving, and Storing Sandwiches

1. How do garnishes make sandwiches more attractive?

2. What types of garnishes are suitable for sandwiches? Name three.

3. What are the two important criteria for holding and storing sandwiches?

## Chapter Highlights

- Sandwiches can be eaten at any meal. They are quick, filling, easy to eat, and sold in all types of foodservice establishments.

- The three most common types of sandwiches are regular, open-faced, and club or decker. Regular sandwiches have two slices of bread; open-faced sandwiches have one slice of bread; and club or decker have at least three slices of bread.

- All sandwiches include three parts – bread, spread, and filling.

- Bread for sandwiches may be either yeast or quick bread. Yeast breads include white, whole wheat, rye, and pumpernickel. Quick breads include Boston brown bread, nut bread, and fruit bread.

- A spread is a thin coating used on one side of the sandwich bread. Spreads may include butter, margarine, mayonnaise, cream cheese, spiced butter, peanut butter, and mustard.

- The sandwich filling is the ingredient (or ingredients) placed between or on the slice(s) of bread. Fillings may be dry (such as meat or cheese) or moist (such as chicken or tuna salad).

- Special precautions must be taken when preparing, holding, and serving moist fillings to prevent salmonella contamination.

- Tools, utensils, and ingredients should be arranged for maximum efficiency for a right- or left-handed worker. The work area may be arranged for one worker or for several workers. The organization of the work area would be about the same in either case. However, a larger work area would be needed for two or three workers.

- A variety of edible garnishes may be used on sandwiches. The garnish should be suitable in texture, form, color, and flavor.

- When holding or storing cold sandwiches, they should be placed in a moisture sealed wrap or container, labeled, and if they are not to be served immediately, refrigerated.

# Chapter 26

## Meat, Poultry, and Fish

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- aging
- butterfly
- capons
- conformation
- crustaceans
- cured fish
- cured meat
- dressed fish
- entrée
- fillets
- finfish
- finish
- fish steaks
- fleshing
- fricasseeing
- giblets
- marbling
- marinating
- mollusks
- papain
- poultry
- pounding
- retail cuts
- scoring
- trichinosis
- trussing
- variety meats
- veal
- wholesale cuts

The term ***entrée*** refers to the main dish of the meal. The most common entrées feature meat, poultry, or fish.

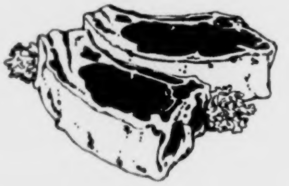
Americans eat large quantities of meat. Steaks and hamburgers are especially popular. Many other types of meat are also served in foodservice establishments.

Meats have a variety of menu uses. Used alone they are often the main dish of a meal. Meats, such as steaks, roasts, and chops, are popular for dinner. For lunch or supper, servings are smaller and meats are often mixed with other foods to create a lighter main dish. Foods, such as macaroni, noodles, spaghetti, rice, and vegetables, can be combined with meat to create a main dish. Casseroles, soups, salads, and sandwiches containing meat are also used as main dishes. Popular breakfast meats include sausage, bacon, and ham.

## MEAT

### Types and Cuts of Meat

In foodservice, the term meat refers to beef, veal, pork, or lamb. Beef is meat from fully grown steers. ***Veal*** is from immature cattle under four months of age. Pork is the flesh of pigs or hogs. Lamb is the flesh of sheep. Meat from these sources is often called red meat to distinguish it from poultry and fish.



Meat is made of muscle, connective tissues, fat, and bone. Muscle is composed of fibers that are held together by connective tissue. The amount of connective tissue affects the tenderness of the meat. The more connective tissue, the less tender the meat. Fat is found in layers on the surface of the meat and in small flecks or streaks throughout the muscle. The small flecks of fat are called ***marbling***. Bone is part of the skeleton of the animal. The amount of bone depends on the cut of meat.

An animal carcass, or body, is first cut in half lengthwise. Each half is called a side. The sides may be cut in half to form quarters. On a beef, the quarters are referred to as the forequarter and the hindquarter. Veal and lamb quarters are referred to as the foresaddle and hindsaddle. Pork is usually sold as a side, instead of quartered. Each side or quarter is cut into smaller portions called ***wholesale cuts***. These are divided into still smaller pieces called ***retail cuts***.

The cuts of meat can be classified into three groups – tender cuts, less tender cuts, and variety meats. The tenderness of each cut is related to its location on the animal. Tender cuts include the loin and ribs of beef, veal, lamb, and pork as well as the leg of veal, lamb, and pork. Less tender cuts include the round, rump, flank, and chuck of beef. The shoulder and breast of veal and lamb are less tender cuts as well as the shoulder of pork. ***Variety meats*** include the liver, kidney, heart, tongue, and brains of beef, veal, lamb, and pork. The sweetbreads (the thymus or pancreas) of beef, veal, and lamb are other variety meats. Liver is the most popular variety meat.

The less tender parts of the animal may be cubed or ground. Ground meat is often made from trimmings and unsalable cuts of meat. Ground beef is purchased by the percent of lean to fat. Fat content is limited by law to 30 percent. Hamburger meat is usually, but not always, ground beef. Unless it is labeled "pure ground beef" it may contain some pork. Ground pork is often made into sausage.

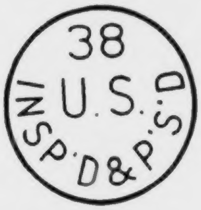
### Forms of Meat

Meat may be purchased fresh, cured, frozen, or canned. Fresh meat has received no special treatment other than aging. ***Aging*** refers to storing or holding the meat under controlled conditions for a specific period of time to allow for natural tenderizing and flavor development by enzymes in the muscle tissue. Wet aging refers to vacuum packaged meat. Dry aging refers to storing large cuts of meat under controlled conditions. Beef and lamb become more tender and more flavorful when aged. Pork and veal are not improved by aging. ***Cured meat*** has been treated with a mixture of salt, sugar, and spices, and is often smoked. Ham, sausages, lunch meats, bacon, Canadian bacon, and dried beef are cured meats. Frozen meat may be either raw or cooked. Frozen meat may be purchased boxed, bagged, pre-portioned, and ready for use. Canned meat is usually fully cooked and sealed in containers which may be stored without refrigeration. Popular canned meats include ham, dried beef, and corned beef.

## *Selection of Meat*

Selection of meats for use in foodservice is based on standards by federal inspection and grading systems. The U.S. Department of Agriculture (USDA) administers the requirements.

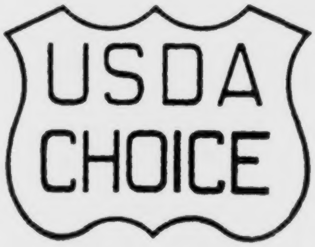
**Inspection and Grading.** By federal law, all meat must be inspected. Inspection is a guarantee of wholesomeness, not of quality or tenderness. The round USDA stamp indicates that the meat came from a healthy animal, and that the processing plant met minimum federal standards of sanitation. The USDA inspection stamp is shown in Figure 26.1.



⇨ *Figure 26.1*

Grading is based on quality standards. It is indicated by a shield-shaped grade stamp or label. Quality grading is based on the texture, firmness, color of the lean meat, the age or maturity of the animal, and the marbling. All of these factors are considered together. The USDA quality grades vary for beef, veal, lamb, and pork. Grading is not a federal requirement, but it is useful to those in buying and selling meat. The USDA grade stamp is shown in Figure 26.2. The USDA meat grades are shown in Figure 26.3.

Until recent revisions in the grading system, quality grades were based on ***conformation*** (the shape of the carcass) and ***finish*** (the distribution of fat on the outside and throughout the meat). Both of these terms are often used in describing meat quality.



⇨ *Figure 26.2*

**Tenderness and Appearance.** Tenderness and appearance are terms often associated with meat quality. As described previously, the cut is one indication of tenderness. The size and shape of the bone in the cut aid in identifying the location from which the cut was taken.

Bones are one of four shapes – round, long, curved, and T-shaped. A round bone indicates that the cut of meat was taken from an arm or leg section. Round bones are found in less tender cuts of meat. Round steaks and arm roasts have round bones.

A long, thin flat bone indicates that the cut was taken from the top part of the leg or arm. If taken from the leg, the cut is a sirloin. If taken from the arm, it is a blade cut.

A curved, thin bone indicates that the meat was cut from the rib section. Rib roasts and steaks have curved, thin bones. A T-bone indicates a loin cut. Club, T-bone, and porterhouse steaks have T-shaped bones. Long, curved, and T-shaped bones are found in more tender cuts of meat.

Some meats are tenderized by a chemical which breaks down the connective tissue. These meats are more tender than other meats. The tenderizing chemical is injected into the animal shortly before it is slaughtered and is carried throughout the animal's body in the bloodstream.

The appearance of the meat is often used as an indicator of quality. Beef should be

## How to Buy Meat

*Look for the USDA Grade:*

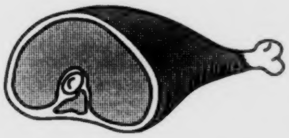
### BEEF

- **USDA Prime**
  highest quality, most tender, juicy, flavorful
- **USDA Choice**
  most popular quality, very tender, juicy, flavorful
- **USDA Select**
  very lean quality, tender, not as juicy or flavorful

### LAMB

- **USDA Prime**
  highest in tenderness, juiciness, and flavor
- **USDA Choice**
  very high in tenderness, juiciness, and flavor

### PORK



- **USDA Acceptable Quality**
  very lean, with grayish pink color

Source: Prepared by Agricultural Marketing Service, Home and Garden Bulletin Number 265. United States Department of Agriculture.

*Figure 26.3*

bright, deep red in color. It should have firm white fat on the outside and thin streaks or flecks of fat (marbling) evenly distributed throughout. The muscle or lean should be velvety and fine grained. Veal should be pink with very little fat. The meat is extremely lean, not too tender, and bland in flavor. The appearance of pork depends on whether it is fresh or cured. Fresh pork should be grayish pink with soft, creamy-white fat. It is firm with a small amount of marbling. Cured pork should be bright pink. Lamb should be gray-pink red with white fat. The meat should be firm and not watery or slimy.

### Handling and Storing Meat

Both raw and cooked meats spoil quickly. To prevent spoilage, meat should be properly handled and stored. Store fresh meat loosely covered in the coldest part of the refrigerator for no more than three days. The temperature should be as cold as possible, approximately 36°F to 40°F. Store prepackaged meat in the original wrapping for no more than two days. Store cured and ready-to-eat meats in the refrigerator tightly wrapped.

Store frozen meats at 0°F or colder in their original wrapping. Thaw frozen meats in the refrigerator. Use thawed meat immediately. Do not refreeze thawed meat. Frozen meat roasts and steaks may be taken directly from the freezer and cooked. Frozen meat loses juice as it is thawed and will become dry during cooking.

Store most canned meats in a cool, dry storage area. Store canned hams weighing over 1 1/2 pounds in the refrigerator. Store leftover meats tightly wrapped or in a covered container in the coldest part of the refrigerator and use quickly.

### ◆ Essential Questions: ◆ Meat

1. What animal is the source of each of the following: beef, veal, pork, and lamb?
2. What are the four forms of meat? Describe each one.
3. How should meat be stored?

## MEAT COOKERY

Meats have a variety of menu uses. Used alone they are often the main dish of a meal. Meats, such as steaks, roasts, and chops, are popular for dinner. For lunch or supper, servings are smaller and meats are often mixed with other foods to create a lighter main dish. Foods, such as macaroni, noodles, spaghetti, rice, and vegetables, may be combined with meat to create a main dish. Casseroles, soups, salads, and sandwiches containing meat are used as main dishes. Popular breakfast meats include sausage, bacon, and ham.

### Principles of Meat Cookery

Meat requires little preparation before cooking. Different methods of cooking are used for tender and less tender cuts of meat.

**Tenderizing.** Less tender cuts may be tenderized by chemical or physical means or by cooking. A commercial powder or liquid tenderizer containing the enzyme ***papain*** may be used to chemically break down the connective tissue in the meat. Another chemical means for tenderizing meat is by marinating. In ***marinating***, the meat is soaked for several hours in an acidic food like tomatoes, vinegar, or lemon juice to break down the connective tissue.

Connective tissue can be broken down physically by cutting, grinding, scoring, or pounding the meat. ***Scoring*** is done by making shallow cuts across connective tissues. ***Pounding*** is done with a mallet which has sharp points to break down the connective tissue.

**Cooking.** Cooking improves the flavor, appearance, and tenderness of meats. It also destroys harmful microorganisms. Cooking coagulates or hardens the protein in the lean part of the meat while it softens the protein in the connective tissues.

Meat should be cooked at a low temperature until just done. Cooking at a high temperature and overcooking hardens both meat fibers and connective tissue and result in excessive shrinkage.

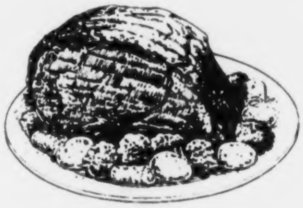
**Testing for Doneness.** The degree of desirable doneness varies with the type meat. Beef and lamb may be medium (140 - 145°F) or well-done (160 - 170°F). Pork and veal should always be cooked well-done. Pork may harbor the parasite, trichina. This parasite causes a disease in humans who eat infected pork called ***trichinosis***. Although the disease is rare today, pork should always be cooked to an internal temperature of 160°F. Veal is cooked well done (170°F) because it has so much connective tissue. All ground meat should be cooked thoroughly to a uniform internal temperature of 160°F or until the center is no longer pink.

## Methods of Cooking Meats

Meat may be cooked with dry or moist heat. It may also be cooked in fat.

**Cooking with Dry Heat.** Dry heat is used for cooking tender cuts of meat. Roasting, broiling, and grilling or panbroiling are dry-heat methods of cooking meat. In these methods, no water is used, and the meat is left uncovered as it cooks.

Roasting or baking meats is done in the oven at 300° to 350°F without the addition of moisture. A meat thermometer may be used to tell when the desired degree of doneness is reached.



In broiling, the meat is cooked by direct heat from hot coals, a gas flame, or a glowing electric element. The cooking temperature is controlled by the distance the meat is placed from the heat source.

Meat is grilled or panbroiled by placing it on the solid surface of the grill or in a hot pan. Usually no additional fat is needed.

**Cooking with Moist Heat.** Moist heat is used for cooking less tender cuts. Braising and cooking in liquid are moist-heat methods of cooking meat. Moist-heat methods tenderize the meat by cooking it slowly in moisture at low temperature. Meats may be browned before braising and stewing to improve their flavor and color.

Braising is cooking meats in their own juices or with a small amount of added liquid. ***Fricasseeing*** is another name for braising. Examples of braised meats include braised beef short ribs, Swiss steak, pepper steak, and beef pot pie.

In stewing, the meat is covered with water or other liquid. The meat is simmered or stewed until tender. Less tender cuts of meat and variety meats are cooked by this method.

**Cooking with Fat.** Sautéing or panfrying and deep fat frying are ways to cook meat in fat. To sauté or panfry meat, only a small amount of fat is used. Meat may be sautéed before being cooked by another method. In deep-frying, the meat is floated in hot fat. Deep fat frying is also called French frying. Oven-frying may be substituted for deep-frying when large quantities of food are to be prepared. In this method, breaded meats are drizzled with fat while baking. The resulting products look and taste much like they were deep-fried.

**Seasoning.** Add seasonings several hours or a day in advance to penetrate the meat. A roast may also be seasoned after cooking.

### ◆ *Essential Questions:* ◆ *Meat Cookery*

1. How can meat be tenderized?
2. Why must pork be cooked well done?
3. What is the difference between dry-heat cooking and moist-heat cooking? Give two examples of each method.

## POULTRY

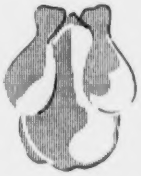
***Poultry*** is the term used for domestic birds raised for food. Common types of poultry include chickens, turkeys, ducks, and geese. Chicken and turkey are the types of poultry most often used in foodservice.

The menu uses of poultry are varied. Chicken has gained popularity in fast-food establishments in the form of chicken "bits" or "nuggets." Sliced chicken and turkey are common sandwich ingredients. Roasted turkey is the traditional entrée for Thanksgiving dinner. Fried chicken is a standard menu item in most restaurants in the southern part of the United States. Baked chicken is also popular as an entrée. Specialty poultry entrées include Cornish hen, pheasant, and duck. Stewed chicken is an ingredient in many casseroles. The white meat of chicken and turkey is also popular as a main dish salad ingredient.

### Classification of Poultry

Poultry is usually classified by its method of cooking. Age and sex of the bird are the primary factors affecting tenderness and flavor. Older birds are less tender, but more flavorful, than younger birds.

**Chicken.** Chickens are classified as broilers, fryers, roasters, capons, or stewing chicken. Broilers are very young birds of either sex weighing 1 to 2 1/2 pounds. They are small in size, and have little meat in proportion to the bone. Broilers are usually halved, each half being served as a portion.



Fryers are young birds of either sex weighing 2 1/2 to 3 1/2 pounds. They are meaty and have some fat beneath the skin. Fryers are usually quartered or cut into smaller serving pieces depending on their size and use.

Roasters, capons, and stewing hens are less tender than broilers and fryers. Roasters are male birds weighing over 3 1/2 pounds. They are very meaty and have a layer of fat beneath the skin. Roasters are usually cooked whole. They may be roasted or braised. ***Capons*** are male chickens that have been desexed. They weigh 4 to 7 pounds. They have a high proportion of white meat and are usually roasted. Stewing hens are heavy, mature birds weighing 4 to 6 pounds. The meat is flavorful, but less tender than that of younger birds. Stewing hens are usually braised or stewed.

**Turkey.** Turkeys are classified as either broilers or roasters. Broilers are young turkeys of either sex. They usually weigh 3 to 7 pounds and have little fat. Roasters are a little older than broilers. Roaster hens (females) weigh 3 to 15 pounds. Roaster toms (males) weigh 8 to 25 pounds. Roasters have more fat than broilers. Hens have more fat than toms.

## Forms of Poultry

Poultry may be purchased either whole or in parts. It is available fresh, frozen, or canned.

Fresh poultry is sold dressed and ready to cook. It may be sold whole, in half, or in pieces, such as breasts, legs, and thighs. Foodservice operations frequently order boxes of poultry portioned into servings. Chicken is often purchased in portioned breaded pieces ready to be fried.

Whole birds, such as turkeys and Cornish hens, are often sold frozen. Pieces and cooked poultry entrées are also sold frozen.

Canned poultry may be purchased whole, cut into pieces, or boned and canned. Canned poultry items include chicken, turkey, and speciality foods, such as chicken chow mein or turkey a la king.

## Selection of Poultry

**Poultry Inspection and Grading.** Like beef, pork, veal, and lamb, all poultry shipped between states must be inspected and approved by the United States Department of Agriculture. The symbol of approval may be a metal disk clipped to the bird's wing, a paper tag stuck on the bird, or a printed emblem on the wrapping. The USDA inspection stamp for poultry is shown in Figure 26.4.

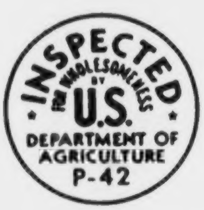


*Figure 26.4*

Grading of poultry by the USDA is voluntary. Poultry grading uses the letters A, B, and C to denote quality. The highest quality is indicated by the letter A. The USDA grading stamp for poultry is shown in Figure 26.5.

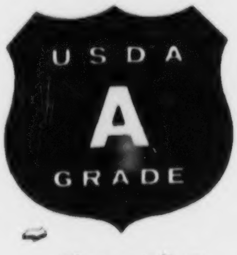


*Figure 26.5*

Federal poultry grading is based on five factors – conformation, fleshing, fat, cleanliness, and condition. Conformation refers to the general form, shape, and body contour of the bird. A check of the bird's ***fleshing*** indicates whether the flesh is plump, and firm-looking. The amount of fat beneath the skin is checked. To meet cleanliness standards, the skin should be free from pin-feathers and down. A check of the bird's condition should indicate that the bird is free from tears, cuts, bruises, blemishes, or defects, such as disjointed or broken bones.

Grade A poultry is well-finished, full-fleshed, and meaty with few blemishes or pinfeathers. Grade B indicates a good quality poultry which is slightly less meaty. Grade C poultry has less flesh and fat than the higher grades.

## Handling and Storing Poultry

Poultry is a very perishable food. It should be handled carefully from the time it arrives in the foodservice establishment until it is served.

Fresh poultry should be lightly wrapped before refrigeration. The wrapping should not be tight enough to prevent air circulation around the poultry. It should be stored in the coldest part of the refrigerator. The poultry should be used in one to two days.

Poultry may be stored for several months if it is wrapped tightly and frozen at 0°F or colder. Although it is not necessary to defrost frozen poultry before cooking, thawing will make the cooking more uniform throughout. Thawing also shortens the cooking time and makes it easier to judge the amount of time needed. Therefore, poultry is usually cooked after thawing.

Store canned poultry in a cool dry place. Opened cans and leftover cooked poultry must be stored in the refrigerator in a tightly covered container.

### ◆ Essential Questions: ◆ Poultry

1. What are the differences in the five types of chicken?
2. What are the three market forms of poultry? Describe each one.
3. What are the principles for storing fresh, frozen, and canned poultry?

## POULTRY COOKERY

### Principles of Poultry Cookery

The poultry purchased by foodservice establishments requires very little pre-preparation. The methods used to cook poultry include broiling, frying, oven frying, roasting, braising, fricasseeing, and stewing.

**Pre-preparation.** The amount of pre-preparation needed by poultry depends largely upon whether the birds must be portioned before use. If portioning is necessary, the birds may be halved, quartered, or disjointed into ten to twelve pieces.

Some birds have a few pinfeathers which must be removed. Pinfeathers are small feathers that have not fully emerged from the skin of the bird. They may be removed using a sharp knife. Insert the knife blade under the feather. Grasp the feather with the thumb and forefinger and pull it out.

When poultry is purchased, the neck and giblets are in the body cavity. The giblets are usually wrapped in paper. ***Giblets*** are the edible internal organs including the liver, heart, and the gizzard. These should be removed from the body cavity before the bird is cooked.

Poultry should be thoroughly washed under cold running water. It should be well-drained before cooking.

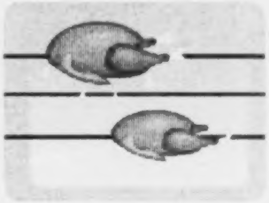
### Methods of Poultry Cookery

The classification of poultry gives a good indication of the appropriate methods of cooking. Very young chickens and turkeys may be broiled. Very young chickens can also be fried. Fully mature chickens and turkeys can be roasted. Broiling and roasting are dry-heat methods of cooking. Older mature chickens should be braised, fricasseed, or stewed. Braising or fricasseeing, and stewing are moist-heat methods of cookery.

For broiling, very young chickens and turkeys are used. Depending on their size, chickens may be halved or quartered for serving. Turkeys are usually quartered. The wing should be folded back on the shoulder to hold it in place. The pieces should be placed on the broiler skin side down. Chickens should be basted often with fat while broiling and turned often to ensure even browning. Chickens are often basted with barbecue sauce while broiling.

Poultry may be fried in several ways. It may be deep fat or french fried. It also may be pan fried in a small amount of fat. Chicken may be prepared for frying in several ways. It may be rolled in flour, in egg and bread crumbs, or dipped into a batter.

Roasting is the same for poultry as for meats. Tender poultry, such as chicken, turkey, and duck, can be roasted on a rack in a shallow pan. The bird should be placed breast side up. No water or cover is needed. Poultry is roasted at a temperature of 325°F. The larger the bird, the longer the cooking time. Poultry should be roasted until the internal temperature is 180°F. This requires about 20 minutes per pound at 325°F.



Large birds are trussed before roasting. ***Trussing*** means tying the legs and wings close to the body. This keeps the bird in shape during roasting. It also prevents the legs and wings from drying out.

Braising or fricasseeing is appropriate for slightly older birds. The chicken is quartered or disjointed. It is then dredged in flour, bread crumbs, or some other browning agent. It is browned uncovered in a small amount of fat. Then a small amount of water is added and the pan is covered. The cooking continues over low heat on top of the range or in the oven at 325°F until the chicken is tender. The cover may be removed for the last few minutes to make the chicken crisp.

Older poultry may be tenderized by stewing. The bird may be stewed whole or in pieces. The bird is placed in a kettle and barely covered with water. Seasonings, such as salt, pepper, herbs, spices, and vegetables, are added. The bird is simmered below the boiling point for three or four hours until the meat is very tender. The meat may be removed from the bones and used to make salads, sandwiches, and casseroles. The liquid from the stewed bird is used for soups, sauces, or gravies. A pressure cooker may be used for stewing to save time.

### Convenience Poultry Products

Poultry is available in a variety of convenience forms. Being ready-to-cook is a convenience we expect in fresh poultry today. Portioned poultry is another common convenience. Breading adds additional convenience.

Canned poultry items include the canned whole bird, cut pieces, boneless meat, sandwich spreads, soups, and prepared specialties, such as turkey a la king. Dehydrated chicken soups are also available.

Frozen convenience poultry items are also widely available. These items include birds stuffed with dressing, frozen pieces or parts, and breaded cuts. A variety of frozen specialty items are also available.

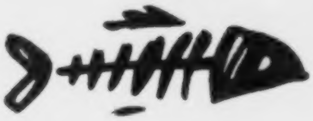
### ◆ Essential Questions: ◆ Poultry Cookery

1. Why are cooking methods different for very young chickens and older mature chickens?
2. What are two examples of convenience poultry products?

## FISH

### Types of Fish

The fish served in foodservice includes both finfish and shellfish. ***Finfish*** have a bony skeletal structure and fins. Finfish are found in both saltwater and freshwater. Bluefish, cod, flounder, haddock, halibut, snapper, sole, and whiting are saltwater fish. Catfish, brook trout, and whitefish are freshwater fish. Some fish migrate between the two. Salmon, for example, are born in freshwater, migrate to saltwater, then return to the freshwater to spawn or lay eggs.



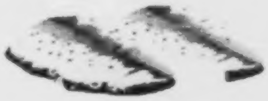
Finfish vary in the color of their flesh and in amount of fat. The flesh of raw fish is very pale. The color is related to the amount of fat. The fat in finfish varies from one to twenty percent. Fish that have more fat usually have a yellowish tinge. Fat fish include mackerel and chad. Salmon and trout, which are also fat fish, are a delicate pink. Fish with little fat have blue-white flesh. Some lean fish are cod, flounder, and halibut. The method of cooking fish is influenced by the amount of fat.

Saltwater fish are more popular in foodservice than freshwater fish. Saltwater fish have fewer but larger bones than freshwater fish. Also, saltwater fish are also usually less expensive than freshwater fish.

Shellfish have a soft body with no spinal column or fins. There are two types of shellfish – crustaceans and mollusks. ***Crustaceans*** have a crust-like shell and segmented bodies. Shrimp, crabs, crayfish, and lobsters are crustaceans. ***Mollusks*** have soft, unjointed bodies. Most have a hard, hinged shell. Clams, oysters, mussels, and snails are mollusks which have hard shells. Squid and octopus do not have shells. Scallops are the muscle that opens and closes the shell of a certain mollusk. Surimi is a processed seafood product made from inexpensive white fish. It is shaped to resemble crab.

## Forms of Fish

Fish may be purchased fresh, frozen, canned, cured, dried, and freeze-dried. Fresh finfish may be purchased in several forms – whole, dressed, steaks, and fillets. Whole fish is sold just as it is taken from the water with the entrails in tact. ***Dressed fish*** is a whole fish with the internal organs, scales, head, tail, and fins removed. ***Fish steaks*** are cross section slices from a large dressed fish. ***Fillets*** are boneless lengthwise cuts from the sides of the fish along each side of the backbone. If a piece of skin is left to hold the two sides together, the cut is called a ***butterfly***. The shape of the piece resembles a butterfly. Only small, thin fish can be butterflied.

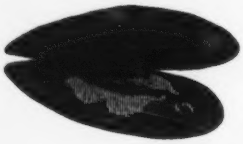


Frozen finfish is available in portioned sticks, squares, rectangles, and fillet-shaped pieces. They may be breaded. They may be raw or precooked.

Salted, smoked or pickled fish is referred to as ***cured fish***. Examples of cured fish include salted cod, smoked mackerel, kippered herring, and smoked salmon.

The market forms of each kind of shellfish is different. Shrimp may be purchased fresh or frozen, raw or cooked. They may be purchased in the shell or peeled. Shrimp have a black strip along the back called a sand vein. Shrimp may be purchased with this vein in tact or removed (deveined). Shrimp may also be purchased canned or freeze-dried.

Most lobsters and crabs are purchased alive. They also are sold fresh, cooked, frozen, or canned. Fresh or frozen whole lobsters or lobster tails are also available for purchase.



Oysters and clams are sold alive in the shell by the dozen, the bushel, or the barrel. Oysters and clams also are sold shucked (removed from the shell) by the pint, quart, or gallon. Small oysters or clams are standard grade. Larger ones are called select. Frozen and canned oysters, clams, and scallops also are available.

Both finfish and shellfish are available canned. Popular canned finfish include salmon, tuna, and sardines. Canned shellfish include oysters, clams, lobsters, crab, scallops, and shrimp.

## Selection of Fish

The inspection and grading of fish for wholesomeness is voluntary. The grading program is supervised by The U.S. Department of Commerce. Inspected fish are identified with an inspection stamp which indicates its quality. Fish are usually graded as U.S. Grade A, Grade B, and Grade C.

The freshness of finfish can be judged by several characteristics. Whole fish should have bulging, bright, clear eyes, bright red gills, and scales that cling tightly to the skin. The flesh of the fish should be firm and springy. No dent should result when the skin is pressed. There should not be a disagreeable odor.

Fresh shellfish have certain distinguishable characteristics. Fresh shrimp are odorless and the shells are firmly attached. Fresh shucked oysters and clams are plump and creamy in color. The liquid they are in is odorless and clear. The shells of live clams and oysters should be tightly closed or should close when touched. The tail of a live lobster should snap back quickly after it is flattened out. Fresh scallops are white, creamy white, or pinkish in color.

Frozen fish should be solidly frozen in packages which show no sign of being thawed or refrozen.

## Handling and Storing Fish

All fish is extremely perishable. Fresh fish should be wrapped in waterproof wrap and placed on top of ice and refrigerated. The fish should not rest in water. Fresh fish should be used within twenty-four hours after purchase. Smoked fish should also be refrigerated. Fish should be stored away from other products to prevent absorption of tastes and odors.

Frozen fish can be stored in its original package in the freezer or refrigerator. Frozen fish should be kept at 0°F or colder. Many fish can be prepared without defrosting. To thaw fish, place it in the refrigerator and use it immediately after it is thawed. Never refreeze fish that has been thawed. Freezing does not kill bacteria, it just slows the growth and reproduction. Fish is very perishable. When it thaws, the bacteria reproduce rapidly. Also there is a loss of food value due to loss of fluids from the tissue. Flavor, color, and texture are affected by this as well.

Canned fish should be stored in a cool, dry place. Once opened, the contents should be placed in a covered container and refrigerated. Canned fish should be used the day it is opened.

### ◆ Essential Questions: ◆ Fish

1. What are three forms of fresh fish? Describe.
2. What is cured fish?
3. What are the storage procedures for fresh, frozen, and canned fish?

## FISH COOKERY

The methods of cooking fish depend on the type of fish being cooked, the state (frozen, fresh) of the fish, the amount of fat the fish contains, and the preparation required before cooking. Other factors may also influence the method of cooking used.

**Pre-preparation.** Some restaurants purchase finfish already prepared and ready to use. Other foodservice operations prepare them on the premises.

Lobsters and crabs should be kept alive until cooked. Shrimp are usually deveined after cooking. Live clams should be soaked in saltwater for fifteen to twenty minutes then rinsed repeatedly until they are free of sand.

Live oysters and clams to be served on the half shell should be opened with a clam or oyster knife at the thinnest part. Insert the tip of the knife where the shell meets. Twist the knife, forcing the shell to open. Cut the muscle holding the clam or oyster to the shell. Place on a bed of ice and refrigerate.

**Cooking.** Finfish are cooked by baking, poaching, steaming, broiling, sautéing, and deep fat frying. The method of cooking is most influenced by the amount of fat. Fat fish are usually cooked by broiling, barbecuing, or baking. Lean fish are better for steaming, sautéing, and deep-frying.

The cooking method for finfish is also influenced by the size and thickness of the piece. Large, whole fish may be baked or stuffed. They may also be steamed or poached. Small, whole fish may be sautéed or panfried. Fish steaks and fillets may be broiled, sautéed, baked, or fried.

Because fish is naturally tender, it cooks quickly. Cooking improves the appearance of fish and brings out its flavor. Use moderate cooking temperatures to prevent the protein in the fish from becoming tough. Fish is cooked when the flesh looks milky and separates easily with a fork. Overcooking makes shrimp tough, tasteless, and dry.

Appropriate cooking methods for shellfish vary. The largest shrimp are usually fried or boiled. Medium size shrimp are usually boiled or steamed and served whole and cold as shrimp cocktail or on a salad. Small shrimp are used in casseroles or salads. Regardless of the cooking method used, care should be taken not to overcook shrimp.

Lobsters may be boiled, broiled, baked, sautéed, or deep-fried. Lobsters can be stuffed before baking. Crab is boiled or deep-fried. Scallops may be sautéed or deep-fried. Clams may be breaded and fried in deep fat whole, in strips, or diced and shaped. Oysters may be baked, stewed, or fried.

### *Convenience Fish Products*

A variety of convenience fish products are available. The convenience forms of frozen fish include frozen fillets, steaks, fish sticks, fish pies, chowders, and a variety of other processed fish products. Frozen processed fish products may be breaded and ready-to-cook, or they may be precooked and require only heating before serving.

Canned fish may be used as it comes from the can in salads and sandwiches. It also may be used as an ingredient in any recipe that calls for cooked fish. Smoked fish are ready-to-eat.

### ◆ *Essential Questions: Fish Cookery* ◆

1. How do the cooking methods for fat fish and lean fish differ?
2. What are three examples of convenience fish products?

## Chapter Highlights

- Selection of meats for use in foodservice is based on quality standards. The United States Department of Agriculture (USDA) regulates standards for inspection and grading.

- Aging refers to storing or holding the meat under controlled conditions for a specific period of time to allow for natural tenderizing and flavor development by enzymes in the muscle tissue. Wet aging refers to vacuum packaged meat. Dry aging refers to storing large cuts of meat under controlled conditions.

- The term meat refers to beef, veal, pork, or lamb. It includes variety meats, muscle, connective tissue, fat, and bone.

- An animal carcass, or body, is cut into sides, quarters, or cuts. The three classifications of cuts are tender cuts, less tender cuts, and variety meats.

- The cut of meat is one indication of tenderness. Some meats are tenderized by a chemical which breaks down the connective tissue, or physically by cutting, grinding, scoring, or pounding the meat.

- Both raw and cooked meats spoil quickly. To prevent spoilage, meat should be properly handled and stored.

- Meat requires little preparation before cooking. Different methods of cooking are used for tender and less tender cuts of meat. Cooking improves the flavor, appearance, and tenderness of meats.

- Poultry is the term for domestic birds raised for food. Common types of poultry include chickens, turkeys, ducks, and geese.

- All poultry shipped between states must be inspected and approved by the USDA. Grading of poultry by the USDA is voluntary and is based on conformation, fleshing, fat, cleanliness, and condition.

- Poultry is very perishable, but may be stored several months if it is wrapped tightly and stored at 0°F or colder.

- The fish served in foodservice includes both finfish and shellfish. Finfish include both freshwater and saltwater fish. Shellfish are classified as crustaceans and mollusks.

- All fish are extremely perishable and guidelines should be followed in handling and storage.

# Chapter 27

## Eggs and Cheese

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- albumen protein
- bloom
- candling
- chalaza
- clarify
- curdle
- curds
- emulsifier
- fortified eggs
- freshness
- imitation cheeses
- natural cheeses
- omelet
- pasteurized processed cheese food
- processed cheeses
- rennet
- ripened
- salmonella
- simmering point
- stabilizers
- vacuum-packed
- whey
- yolk

Eggs and cheese are important both as main dishes and as ingredients. In addition, both can be used to garnish other foods.

## EGGS

### *Selection of Eggs*

Eggs are used in a variety of ways in cooking. As main dishes, they are especially popular at breakfast. As ingredients, they have a variety of functions.

Eggs are one of the most versatile foods available. They are naturally prepackaged and premeasured. An egg consists of a white (***albumen protein***) and a yellow portion (***yolk***) contained in a shell. The yolk contains fat, cholesterol, and protein. The yolk is held in place by the ***chalaza***, twisted, cord-like strands of heavy egg white. In the large end of the egg is an air cell. A freshly laid egg has no air cell. As moisture evaporates from the egg, the air cell is formed. The older the egg, the larger the air cell.

The shell of the egg is porous. It permits moisture and gases to pass through. Odors and flavors may be absorbed while moisture may be lost. On the outside of the shell, a thin film called the ***bloom*** helps to seal the pores and protect the egg from contamination. The color of the shell may be white to brown depending on which breed of chicken laid the egg. The color of the shell does not affect its quality or nutritive value. The parts of an egg are shown in Figure 27.1.

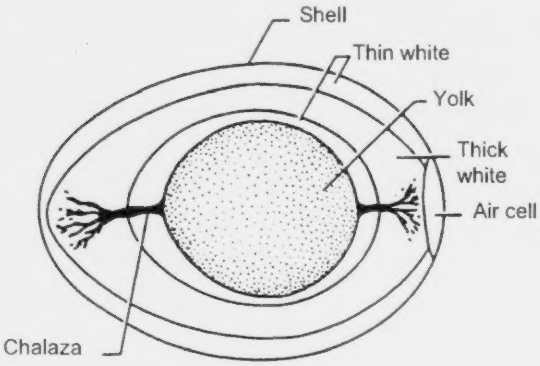


*Figure 27.1*

**Grade and Size.** Most eggs are graded for freshness and size. ***Freshness*** refers to the quality of the eggs, not their age. The standards for judging the quality or freshness of eggs have been established by the United States Department of Agriculture (USDA).

The freshness of the egg is judged by a process called ***candling***. The candling process involves placing the egg in front of a strong light beam in a darkened room. Moving the egg in front of the light makes it possible to determine the thickness of the white, the size and position of the yolk, and the size of the air space. The freshest egg has a thick white. The white supports the rounded, firm yolk. The air space at the wide end of the egg is small. The freshest eggs are Grade AA, followed by Grade A and Grade B. The difference in grade is based on the characteristics of the white, yolk, and air space. Lower grade eggs have less thick white, a yolk that is not as rounded or firm, and an air space of increased size.

The size of the egg is not related to its quality. The size of eggs is based on their weight per dozen. Small eggs weigh only 18 oz. per dozen while jumbo eggs weigh 30 oz. per dozen. The six egg sizes established by the USDA are as follows:

| | |
|---|---|
| • Peewee | 15 oz. |
| • Small | 18 oz. |
| • Medium | 21 oz. |
| • Large | 24 oz. |
| • Extra Large | 27 oz. |
| • Jumbo | 30 oz. |

The difference between the minimum weight for two sizes is 3 oz. Most recipes were developed to use large or medium eggs. To avoid variation in egg size, measure the amount of egg. For example 125 milliliters or 1/2 cup is the standard recipe measure for one egg Using eggs of a certain size or measuring the amount of egg eliminates variations in recipe results. Large eggs are used by most foodservice establishments.

**Forms Available.** Eggs may be purchased fresh, frozen, and dried. Whole eggs, whites, and yolks may be processed in liquid, frozen, and dried forms. Buyers of alternate forms of eggs are usually persons in the foodservice industry.

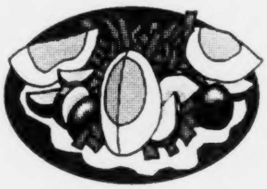
Fresh, whole eggs in the shell are purchased by the dozen. A box of eggs contains fifteen dozen eggs. The boxes are labeled with the grade and size of the eggs and the USDA emblem. Fresh, whole eggs are washed before packaging. After washing, the eggs are sprayed with a fine mist of oil to reseal the pores and prevent loss of moisture through the shell.

## Menu Uses of Eggs

Eggs may be served at any meal of the day. Fried eggs, scrambled eggs, and poached eggs are popular for breakfast. Hard-cooked eggs are often used in sandwiches and salads for lunch. Omelets may be served at any meal. Quiche, crepes, and souffles are popular for lunch or a light supper. In addition, many popular foods are made with eggs. Egg drop soup, eggnog, banana cream pie, eclairs, and meringue cookies are all made with eggs.

## Eggs as Garnishes

Hard-cooked eggs are popular garnishes for many foods. Hard-cooked eggs used as garnishes are halved, quartered, sliced, chopped, or sieved. Deviled eggs can also be used as garnishes. For canapés, sliced or chopped eggs often are used as garnishes. For salads and sandwiches, hard-cooked eggs are quartered, sliced, or chopped. Cream sauces are often garnished with sieved egg yolks, egg whites, or both. Deviled eggs often are used as garnishes for a main course.



## Convenience Egg Products

Processed and convenience egg products are available to the foodservice industry and are becoming more available in neighborhood grocery stores to the general public. Processed egg products, such as frozen eggs, dried eggs, refrigerated eggs, and substitute eggs, are available for reasons such as convenient storing capabilities, less waste of yolks in recipes that call for pure egg whites and vice versa, alternative to an otherwise high cholesterol product if prepared with fresh eggs, and continual access to egg products for use as needed with less chance of spoilage. In certain situations, processed egg products may prove to be more cost efficient for foodservice operations than keeping a fresh supply of eggs regularly available.

**Fresh Eggs.** Fresh eggs in liquid form are sold in cans. They are available as liquid whole eggs, yolks only, or whites only. A 30 lb. can holds about 300 whole eggs, 670 egg yolks, or 540 egg whites. Liquid eggs are sold with different amounts of yolks and whites. ***Fortified eggs*** are a mixture with more egg yolks than egg whites.

**Frozen Eggs.** Frozen eggs are often cheaper than liquid whole eggs. Frozen eggs are sold whole, yolks only, or whites only. They are sold with different amounts of yolks and whites. Frozen eggs are pasteurized and available in 30 lb. cans.

Thawed frozen eggs and reconstituted dried eggs are highly perishable. Careful handling is essential to prevent contamination. Frozen eggs should be stored in the freezer at 0°F or below and thawed in the refrigerator. Thaw frozen eggs in the refrigerator. To speed thawing, the container may be placed under cold running water. Thawed eggs must be used immediately or refrigerated in an airtight container and used within twenty-four hours.

**Dried Eggs.** Dried eggs are available whole, yolks only, or whites only. Dried eggs are ***vacuum-packed*** (packed without air). Unopened packages of dried eggs should be used in a cool dry place or in the refrigerator. The temperature should be no more than 50°F. After opening, any unused portion should be refrigerated in a container with a tight lid. Only the amount needed at one time should be reconstituted. Dried eggs should be reconstituted as directed or sifted with dry ingredients. Reconstituted eggs should be used immediately or refrigerated in airtight containers and used within one hour.

**Hard-cooked Eggs.** Peeled, hard-cooked eggs are also available for purchase. The cost effectiveness of this convenience should be determined by the management. Handling and storage directions that come with the peeled, hard-cooked eggs should be closely read and followed. Hard-cooked eggs are sliced, diced, halved, quartered, or sieved for use in salads, sandwiches, sauces, or as garnishes. They also are used to make deviled eggs and save many preparation steps for the foodservice worker.

### ◆ Essential Questions: ◆
### Eggs And Convenience Egg Products

1. What are the parts of an egg? Describe each part.
2. How are eggs graded?
3. What forms of egg are available?
4. How should eggs be stored?

## EGG COOKERY

The high protein content of eggs dictates the principles of egg cookery. As with all protein, low to moderate temperatures and a short cooking time are necessary. High temperatures and overcooking cause the protein to toughen, curdle, and discolor.

Eggs are served as a main dish, used as an ingredient, or used as a garnish. Eggs are cooked in or out of the shell. Eggs cooked in the shell are correctly referred to as hard-cooked or soft-cooked rather than by the more popular terms "hard-boiled" and "soft-boiled." Eggs cooked out of the shell are baked, poached, fried, scrambled, or cooked as omelets, quiches, or soufflés.

As an ingredient, eggs have a variety of uses. They are used as a classifier, binder, emulsifier, thickener, coating, or leavener. Eggs are also important as garnishes. Hard-cooked eggs may decorate salads, appetizers, sandwiches, casseroles, and other dishes.

### *Eggs as a Main Dish*

Eggs can be prepared in many ways to form main dishes. However, most can be grouped into one of six methods of preparation: cooking in the shell, frying, poaching, baking, scrambling, and preparing omelets.

**Cooking in the Shell.** Eggs are cooked in the shell in a kettle or steamer. To cook eggs in a kettle, place room temperature eggs in wire baskets and immerse them into boiling water. Simmer the eggs until they reach the desired degree of doneness. The ***simmering point*** is just below the boiling point. The cooking time determines the firmness of the egg. Soft-cooked eggs are cooked for less time than hard-cooked eggs. Eggs are soft-cooked by covering them with cold water, bringing the water to a full rolling boil, then cooling the eggs under cold, running water. Eggs are hard-cooked in a steamer at 5 lb. pressure, then plunged at once into cold water.

Use of boiling water or overcooking causes the egg to develop a dark green ring around the yolk. This discoloration is due to interaction of the iron and the sulfur in the egg. High temperatures and overcooking also make the whites rubbery. Cooling eggs immediately after cooking helps to prevent discoloration. Cool the eggs under running water.

Halved, quartered, sliced, diced, or sieved hard-cooked eggs are used in salads, sandwiches, sauces, or as garnishes. Hard-cooked eggs are used in a variety of dishes. For deviled eggs, the yolks of halved hard-cooked eggs are mixed with seasoning and mayonnaise. For eggs a la goldenrod, chopped egg whites are added to a cream sauce which is served over toast with sieved egg yolks on top.

**Frying.** Fried eggs are a popular breakfast food. The appearance of a fried egg depends on the quality of the raw egg. A high quality egg covers a small area. The white is thick and stands high and the yolk is firm and high.

Fried eggs are cooked in a small amount of fat over very low heat. Eggs are fried on a griddle or in a frying pan. When eggs are fried on the griddle, rings are used to contain each egg as it cooks. The length of cooking determines the degree of firmness.

Specific terms are used to describe the ways eggs are fried. In restaurants, customers specify their preferences when placing their orders. Eggs are fried sunny-side-up, over-easy, hard-fried, or basted. Sunny-side-up or "eyes open" means the egg is cooked without turning; the yolk runs when broken and the white is firm. Over-easy means the egg is turned over while frying, the white is firm, and the yolk is soft. Hard-fried means the egg is cooked until both the white and yolk are firm, but not rubbery. Basted means the eggs are cooked in hot fat in a skillet or on the griddle and basted with fat without turning until the desired hardness is reached. The effect of basting is achieved by adding a teaspoon of water to the pan and covering the pan for a few seconds.

Eggs are also fried in an oven. To oven-fry eggs, the fat is heated in pans or skillets. The eggs are slipped into the fat very carefully and baked at 400°F for five to seven minutes until the desired hardness is attained.

**Poaching.** Poached eggs are cooked in a small amount of water that is just below the boiling point. For poaching, Grade AA eggs should be used. If lower grades are used, the egg white will spread too much. Adding a small amount of salt or vinegar to the water helps harden the whites before they spread in the water. The water must be below the boiling point or the egg will become tough. The length of cooking time will determine the degree of firmness of the poached egg. The eggs can be rinsed in hot water before serving to remove the vinegar.

Although eggs can be placed directly in the water for poaching, poaching eggs in small individual dishes is easier. Sauce dishes or a special poaching dish may be used. A poaching dish is a skillet fitted with a rack of small cups. One egg is placed in each sauce dish or cup. Water is heated to a simmering temperature in the skillet. A shallow pan of the same diameter may also be used. The containers of eggs are added, the skillet or pan is covered, and the eggs are allowed to steam five to seven minutes.

Eggs can also be poached in a steamer. Break the eggs into water in shallow counter pans. Steam at 5-lb. pressure for three to five minutes. Near the end of the cooking time, the whites of poached eggs should be tested for doneness and served immediately.

**Baking.** Baked or shirred eggs are similar to both fried eggs and poached eggs. The egg is placed in a lightly greased cup, muffin tin, or ramekin. A ramekin is a shallow ceramic baking dish with a handle. Salt, pepper, bread crumbs, milk, cream, or other ingredients may be added. The eggs are cooked in the oven at a moderate temperature (325°F) for fifteen to twenty minutes or to the desired degree of doneness. Doneness is tested by touching the egg lightly. Baking is a convenient way to cook a large number of eggs at once.

Follow the procedure below for fluffy baked eggs:

1. Separate whites and yolks.
2. Beat egg whites until fluffy.
3. Pile whites lightly on toast. (Meat may be placed on toast prior to adding the egg white.)
4. Make a depression in the egg white.
5. Place the egg yolk in the depression.
6. Bake at 350°F for ten to twelve minutes. (The whites should be lightly browned and the yolk soft.)

**Scrambling.** Scrambled eggs are made of beaten eggs. Because the appearance of the egg before cooking is not important, eggs of a lower quality can be used.

A small amount of water, milk, or cream is added to the blended egg to ensure tenderness. Water makes the eggs tender. Milk or cream adds body and makes the eggs creamy and soft. A cream sauce is used when a large quantity of scrambled eggs are to be held on the steam table for a length of time. Scrambled eggs are often seasoned with salt and pepper.

The scrambled egg mixture can be made ahead of time. For larger quantities, use a whip, eggbeater, or hand mixer. The mixture is stored in a pitcher until needed. With experience, a short-order cook learns the amount of mixture to make each morning.

Eggs are scrambled on a griddle, or in a sauté pan, double boiler or bain-marie, brasier, or shallow baking pan in the oven. The eggs are stirred with a turner, spatula, fork, or spoon. Quality scrambled eggs are soft, yellow, and tender, but never watery. High heat and overcooking causes scrambled eggs to "weep" or become watery.

To cook eggs in a sauté pan or on the griddle, the mixture is cooked in a small amount of melted fat. Low to moderate heat is used. Eggs are lifted as they thicken and the uncooked portion is allowed to flow under the thickened portion. This method produces tender, layered, solid eggs.

To scramble eggs in a double boiler or bain-marie, water is heated to boiling in the bottom of a double boiler or bain-marie. The heat is reduced and butter is melted in the top of the double boiler. Next, the eggs are poured in and cooked, while stirring occasionally until thick. This method produces fine, soft particles, rather than large pieces.

To cook eggs for serving from a steam table, eggs should be cooked in a small amount of butter in a sauté pan. While cooking, eggs should be stirred vigorously until hardened. For a large amount, one-third of the eggs may be cooked at one time. The eggs should be placed in a container from the steam table and the cream sauce may be stirred into the eggs. Place the container in the steam table for serving. This method produces large, soft pieces of egg that stand up well on the steam table.

To cook scrambled eggs in the oven, butter should be heated in the baking pan. The eggs may be placed in the baking pan over the melted butter and placed in the oven. Cook, stirring occasionally, until thick and chunky. Eggs prepared by this method should be served immediately.

**Preparing Omelets.** An *omelet* is a mixture of eggs, salt, and pepper cooked in a sauté pan. The mixture is like the one used for making scrambled eggs. However, omelets are not stirred during cooking. Omelets are made

one at a time. Two to ten eggs are used for each omelet.

Omelets may be plain or fluffy. A plain omelet is called a classic or French omelet. It is cooked on top of the range. The fluffy omelet is started on top of the range and finished in the oven.

The following is the procedure for making a plain or French omelet:

1. Melt a small amount of butter until it is foamy, but not brown. Beat the eggs.
2. Pour in the beaten eggs tilting the pan to spread the eggs over the bottom of the pan.
3. Shake the pan vigorously while spreading the eggs evenly.
4. Cook the eggs until set; let them cook flat, like a large pancake.
5. Raise the edges of the omelet to allow the uncooked egg mixture to reach the bottom of the pan.
6. Fold or roll the omelet.
7. Slip the folded omelet onto a warm plate and serve immediately.

The following procedure is used for making fluffy omelets:

1. Separate the yolks and whites.
2. Beat the egg whites until stiff.
3. Beat the egg yolks with salt and pepper until thick and lemon-colored.
4. Fold the whites into the yolks, mixing thoroughly.
5. Heat butter in a sauté pan until it foams.
6. Add the eggs.
7. Brown the bottom side quickly.
8. Place in the oven and bake about 15 minutes until the top is lightly browned. The mixture should feel dry and firm to the touch.
9. Crease the omelet and fold it over on itself.
10. Slip the folded omelet onto a warm plate and serve immediately.

Omelets may be filled or covered with a sauce. Many different foods are used to fill omelets. A filling of jelly, chopped meat, poultry, seafood, cheese, vegetables, or chopped herbs are added just before folding the omelet.

## Cooking with Eggs

In addition to their uses as main dishes, eggs are used as ingredients in a variety of recipes. Eggs are used to clarify, bind, emulsify, thicken, coat, or leaven.

**Clarifier.** Egg whites and crushed egg shells may be added to stock, the basic ingredient of many soups, to clarify it. The word ***clarify*** means to clear. The egg will absorb small particles in the stock leaving the stock clear. The egg is removed by straining before the stock is used.

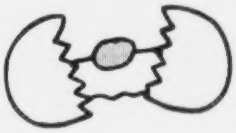
**Binder.** Egg is often used as a binder to hold other foods together. Eggs hold the ingredients in foods like meat loaf and salmon croquettes together. Since only a little egg is used, high temperatures may be used.

**Emulsifier.** An ***emulsifier*** holds oil and another liquid together so that the oil is distributed evenly throughout the mixture. Without the emulsifier, the oil and liquid would separate and the oil would rise to the top. When eggs are used as an emulsifier, the egg white forms a film around particles of oil keeping it suspended in the liquid. Mayonnaise is an example of a permanent emulsion in which eggs serve as the emulsifier. The eggs hold the oil and vinegar or lemon juice together.

**Thickener.** Eggs coagulate or thicken when cooked. This makes them good thickeners for foods, such as puddings, custards, and sauces. A low temperature must be used or the product will ***curdle*** or develop a rough texture. Overcooking will also cause the product to curdle.

**Coating.** Foods to be fried are often dipped in beaten eggs and then coated with bread crumbs, flour, cornmeal, or other coating mixtures. The eggs cause the crumbs to stick to the food. Cutlets, fish fillets, and other foods are coated in this manner, then fried.

**Leavening.** When air is beaten into eggs, they act as a leavening agent. To leaven means to make a food light. When air is beaten into egg whites, a foam is formed. The egg white surrounds the air bubbles in the foam. Egg white foams are used to leaven puffy omelets, soufflés, meringues, angel cakes, and other foods. The air in the egg white foam expands when heated, causing the product to increase in volume until the heat thickens the egg protein which surrounds the air bubble. This makes the product light and porous. Low temperatures are used to delay coagulation of the egg white and allow as much time as possible for the air to expand.



Several things can be done to ensure that as much air as possible is beaten into the egg whites:

- First, bring egg whites to room temperature before beating.
- Avoid exposing the egg whites to fat. Fat from the egg yolk, milk, or a greasy bowl or beater reduces the amount of air which can be beaten into the egg whites.
- Select the smallest suitable bowl, one with a small rounded bottom and sides that slope out to a wider top.

For the best leavening action, the egg whites should be stable. The stability of the foam is increased by adding cream of tartar, using thick whites, and adding sugar gradually after the whites are beaten to the soft-peak stage.

The type product determines the stiffness to which the egg whites are beaten. The egg whites are suitable for folding into mixtures when the peak will just bend over when the beater is slowly lifted out of the foam. This soft-peak stage is also used for the soft meringues used on cream pies. Additional beating causes the peak to stand up straight as the beater is lifted. Hard meringues are beaten to the stiff-peak stage. Hard meringues are shaped into meringue shells or cookies and baked at a low temperature (250°F).

Meringue shells may be filled with ice cream or fruit. Further beating causes the foam to become dry and break into pieces or lumps. Overbeaten egg whites are not useful in food preparation.

Beaten egg yolks or whole eggs also help to leaven baked products that contain other leavening agents besides air. They also add moisture to form steam, adding to the leavening action. Eggs provide part of the leavening for butter cakes, muffins, and other quick breads.

### ◆ Essential Questions: ◆
### Egg Cookery

1. What is the difference in fried eggs and poached eggs?
2. How are eggs used in various recipes? Give three examples and describe each one.

## SERVICE, CARE, AND STORAGE OF EGGS

### Serving and Garnishing Eggs

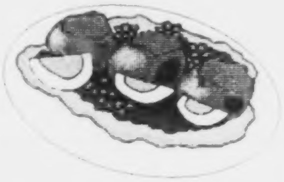
Diced or sliced eggs are often used as garnishes for other foods, such as salads and canapés. There are, however, also a variety of ways to serve and garnish eggs. For every way that eggs can be prepared, there are ways that they can be garnished for flavor and visual appeal.

**Poached Eggs.** Poached eggs may be served plain or used in other dishes such as the following:

- ***Eggs Benedict*** poached eggs are served on a toasted English muffin with a slice of Canadian bacon and topped with Hollandaise sauce.
- ***Western-style*** poached eggs are served with a spicy tomato sauce.
- ***Eggs Florentine*** poached eggs are served on a nest of cooked spinach topped with cheese sauce.

**Hard-Cooked Eggs.** Hard-cooked eggs are frequently prepared and served as deviled eggs. Garnishes for deviled eggs include the following:

- bacon pieces
- paprika
- pimento
- sprig of parsley
- sliced olive



**Baked Eggs.** For variety, the baking dish can be lined with luncheon meat, ham, or cooked bacon, such as in Eggs Mornay, which are either:

- baked in cheese sauce and sprinkled with grated cheese or
- baked in tomato cups topped with buttered crumbs.

**Scrambled Eggs.** For variety and additional flavor and texture, scrambled eggs are served or garnished with the following:

- mushrooms
- chopped or grated cheese
- curry powder
- shredded dried beef
- diced ham
- chopped bacon

Scrambled eggs may also be served with a spicy tomato or picante sauce, a sprig of parsley, chopped green onions or bell peppers.

**Omelets.** A creamy sauce or a spicy tomato sauce may be spooned over the already prepared omelet after it is placed on the serving plate.

Garnishes for omelets should be suited to the filling or sauce used. Omelets are often garnished with a variety of foods such as the following:

- parsley
- chopped hard-cooked egg
- pimento
- asparagus spears

## Holding and Storing Eggs and Egg Dishes

The quality of eggs begins to decline as soon as they are laid. As eggs deteriorate in quality, the white becomes thinner, the yolk flattens, and the air space increases in size. Proper storage slows this process. Fresh eggs should be kept under refrigeration until they are ready to be used. Eggs retain their high quality for up to four weeks at a temperature no higher than 40°F. However, their quality will decline rapidly at room temperature. Eggs should be kept in cartons in which they were delivered. Keep eggs away from foods that have odors that might be absorbed by the eggs, i.e., onions.

Most egg dishes should be served immediately. Hard-cooked, unpeeled eggs may be kept for up to one week in the refrigerator. Refrigerate cream, custard, meringue pies, or foods with custard fillings, immediately after preparation. These foods should be used within three to four days. Refrigeration helps prevent the growth of salmonella bacteria.

Frozen eggs should be kept in the freezer. Frozen eggs will keep nine months to one year. They take two days to thaw in the refrigerator. Opened containers of dried eggs should be tightly covered and stored in the refrigerator. Dried eggs should be used as soon as possible.

## Food Safety Guidelines for Eggs and Egg Products

1. Wash and sanitize hands before and after handling eggs/egg products.
2. Work area, utensils and equipment should be sanitized before and after working with eggs.
3. Store eggs in refrigerator and pull as needed for menu items; temperature must be 40° F or lower.
4. Menus should reflect cooked egg ingredients; however, pasteurized eggs may be substituted for salads, ice cream, sauces, and eggnog.
5. For cooked items, like meringues, custards, and French toast, pasteurized eggs are safer.
6. Cook eggs and egg products promptly after removing the shell, and avoid pooling liquid egg mixture. Also, never reuse a container that has held raw eggs. Use a clean sanitized container for each batch.
7. Eggs should not be runny, but thoroughly cooked until the yolk and white are firm.
8. Hold cooked eggs at 140° F or higher.
9. Common procedures for cooked eggs vary from one establishment to another, but the following box shows general cooking times:

- Fried, over easy — 3 minutes at 250° F, then turn 2 minutes on the other side
- Sunnyside — 7 minutes on cooking suface of 250° F
- Scrambled — 1 minute on cooking suface of 250° F
- Poached — 5 minutes in boiling water
- Soft-boiled — 7 minutes in boiling water

*Table 27.1*

### Sanitation

**Salmonella** food poisoning may be caused by consumption of raw or undercooked eggs. Food safety guidelines for egg and egg products are shown in Table 27.1.

### ◆ Essential Questions: ◆
**Service, Care, and Storage of Eggs**

1. What is the difference between Eggs Benedict and Eggs Florentine?

2. What are the proper storage procedures for fresh eggs, frozen eggs, and egg dishes?

## CHEESE

Cheese is a milk product made from the milk of cows, sheep, or goats. Most cheese is made from cow's milk. A starter made of sterilized milk and an enzyme called ***rennet*** causes the milk to separate into solids and liquid. The starter may also contain bacteria or molds which produce the special flavor of the cheese. Cheese is made from the milk solids or ***curds***. The liquid or ***whey*** is removed. The cheese is then ripened under carefully controlled conditions of temperature and humidity. It is ***ripened*** for a certain length of time to develop its flavor or sharpness. Sharp cheese is aged cheese with a well-developed flavor. Cheeses, such as cottage cheese, do not undergo any curing or ripening. They are called unripened cheeses and are consumed fresh soon after they are made.

| Natural Cheeses | | | |
|---|---|---|---|
| **Hard** | **Semi-hard** | **Semi-soft** | **Soft** |
| Parmesan | Cheddar | Bleu | Bel Paese |
| Romano | Colby | Brick | Brie |
| | Gouda | Gorgonzola | Camembert |
| | Edam | Monterey Jack | Cottage |
| | Gruyere | Mozzarella | Cream |
| | Provolone | Muenster | Neufchatel |
| | Swiss | Stilton | Ricotta |

*Table 27.2*

## Selection of Cheese

Cheeses must be selected for their intended use. Some cheeses are used mostly for appetizers, desserts, and salads. Such cheeses include blue, Brie, Camembert, Edam, Gorgonzola, Gouda, Liederkranz, Limburger, Roquefort, and Stilton. Some of these cheeses have very strong flavors that make them unsuitable for cooking. Others do not melt and blend in cooking.

A good cheese for cooking should be meltable, blendable, and have a definite cheese flavor. When heated, the cheese should become soft and smooth. It should blend easily with other ingredients. The texture should be appropriate for the item being prepared. The flavor should be definite, but not strong enough to overpower the flavor of other ingredients.

In foodservice, processed cheese and processed cheese food are often preferred to natural cheese for cooking. These cheese products are cheaper than natural cheeses. They keep well and may be stored on the shelf until opened. They are very mild and melt easily. They do not become stringy or curdled.

## Kinds of Cheeses

Cheeses may be classified as natural cheeses, processed cheeses, pasteurized processed cheese food, and imitation cheeses.

**Natural Cheeses.** ***Natural cheeses*** are made from milk combined with a starter. They are classified according to their degree of hardness – hard, semi-hard, semi-soft, and soft. Parmesan is the hardest cheese. Grated Parmesan is used in cooking or sprinkled on foods like spaghetti. Cheddar is a semi-hard cheese used for sauces, sandwiches, and salads. Blue cheeses are semi-soft and have characteristic blue veins formed by mold during the ripening process. They are popular in salads and salad dressings. Mozzarella is the cheese used in making pizza and lasagna. Cream cheese is a soft cheese often used as a spread, and cottage cheese is a popular soft cheese used in salads, dips, and in cooking. Some natural cheeses are listed in Table 27.2.

**Processed Cheeses.** ***Processed cheeses*** are made from a combination of ground cheeses. An emulsifying agent is added to make the cheese melt and blend more easily. Processed cheeses often have lactic acid, cream, salt, coloring, special seasonings, or smoke flavor added. The cheese is molded into shape. It has no rind and may be either hard or soft in texture. Processed cheeses melt easily without curdling.

Some processed cheese, called cold pack, is of spreading consistency. Cold pack cheese is a blend of fresh and aged natural cheese.

**Pasteurized Processed Cheese Food.** ***Pasteurized processed cheese food*** is made much the same way processed cheese is made. One or more ground natural cheeses are mixed with nonfat dry milk solids and water. ***Stabilizers*** may be added to preserve the texture of the food. This product contains only about 10 percent butterfat, instead of the 36 percent required for cheese. Therefore, it is not actually a cheese.

Pasteurized processed cheese food is mild, soft, and melts easily. It comes in bricks, rolls, slices, or links. It may be mixed with additional moisture to form a spread. Cheese spread may contain pimentos, fruits, vegetables, or meats. It may have a smoked flavor. Cheese spread is packaged in jars and loaves.

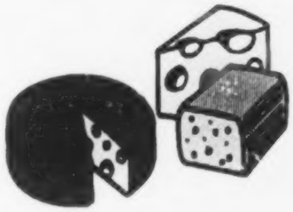
**Imitation Cheeses.** ***Imitation cheeses*** are also available. They are made from milk protein and vegetable oils. They are less expensive than natural cheese and have only about 10 percent of the cholesterol of other cheeses.

## Forms of Cheese

Cheese is available in many varieties and forms. It comes packaged in many different containers. Cheese comes in cardboard containers, jars, plastic dishes, or individual wrapping.

The varieties of cheese include natural cheeses, processed cheeses, pasteurized processed cheese food, and pasteurized processed cheese spread. Natural cheeses may be classified as hard, semi-hard, semi-soft, or soft.

Cheese may be purchased in blocks, bricks, loaves, moons, half-moons, rolls, links, or purchased sliced, grated, shredded, or cubed. It may be purchased in pressurized cans, as spreads and dips in many flavors, or as a ball rolled in nuts. Cheese spreads are packed in jars. Convenience forms of cheese usually cost more than the same weight of cheese in a solid piece.



Soft cheeses, such as cottage cheese, ricotta, and cream cheese, are highly perishable. They must be used before the date marked on the package. Cottage cheese comes in several varieties. It can be purchased as dry cottage cheese with no cream added or as creamed cottage cheese. It may also be purchased with added fruits, fresh garden vegetables, or chives.

Canned cheese soup or cheese sauces are available. Canned cheese soup is used as a ready-made cheese sauce for au gratin vegetables, casseroles, meats, and pastas.

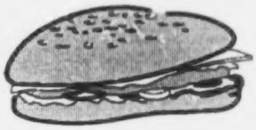
In addition to products which are primarily cheese, a variety of convenience foods containing cheese are available. Examples include macaroni and cheese mixes.

## Grades of Cheese

The United States Department of Agriculture (USDA) has developed quality standards for cheddar and Swiss cheeses. The USDA inspection shield ensures that products are produced under sanitary conditions and are of good quality. The USDA grades for cheese are based on flavor, texture, appearance, and color. U.S. Grade AA is the finest quality; U.S. Grade A is good quality. Cheese is either USDA inspected only or inspected and graded. The grade may or may not be marked on packages of cheese.

## Menu Uses of Cheese

Cheese has a variety of menu uses. It can be served alone, combined with other foods, or grated and sprinkled on top of other foods. Cheese is often the main ingredient of a recipe.



Cheese is a favorite for sandwiches and appetizers. Popular cheese sandwiches include pimento cheese, grilled cheese, ham and cheese, and cheeseburgers. As appetizers, cheese is served on canapés, in dips, or spread on raw vegetables or crackers.

Cheese can be combined with fruits and vegetables in salads. Cottage cheese is often used on low-calorie salad plates to top a pineapple slice or peach half. Strips or cubes of cheese often are an ingredient in a tossed or garden salad. Grated cheese is used as a topping on fruit or meat salads and baked potatoes. Cheese is the ingredient which gives flavor to Roquefort or Blue cheese salad dressings. Hearty cheese salads are used as main dishes. Lighter cheese salads are used as accompaniments to the meat course.

Cheese is used as the chief ingredient of many main dishes. Popular cheese dishes include Welsh rarebit, cheese fondue, lasagna, pizza, cheese omelets, quiche, and macaroni and cheese. In these dishes, the cheese is the dominating flavor. Cheese also can be combined with other foods, such as meat, potatoes and other vegetables, rice, noodles, and spaghetti. Cheese is often used to replace meat and eggs because it is high in complete protein.

Cheese is used as a topping or in a sauce. Slices of cheese may be melted over grilled vegetables or hamburgers or on top of individual casseroles. Bits of cheese are added to cream sauces and soups. Cheese sauces are often added to vegetables. Foods cooked in a cheese sauce are listed as au gratin on restaurant menus. Cheese sauces also are used with macaroni and other pastas in main dishes, such as macaroni and cheese and lasagna.

Cheese pies, cakes, and fancy frozen or gelatin desserts are popular endings for meals. Cheese pies and cakes are made from soft cheeses, such as cottage or cream cheese. Fruit and cheese trays make a good dessert for a light meal. Cheese is also a favorite accompaniment for fruit pies.

As garnishes, cheeses can be cut into a variety of shapes and used to decorate cold foods. Grated cheeses are used as a garnish for soups, sauces, and hot dishes.

A basic rule is to serve cheese at room temperature to fully develop flavor. However, this rule does not apply to unripened cheese such as cottage cheese.

### ◆ Essential Questions: ◆ Cheese

1. What are the four kinds of cheese available? How are they different?

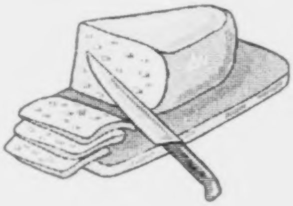
2. What are the USDA grades of cheese based on?

## CHEESE COOKERY

Cheese may or may not be cooked in food preparation. Cheese is used uncooked in a variety of cold foods. Sliced cheese is used as an ingredient in many cold sandwiches. Grated cheese is mixed with mayonnaise and other ingredients for sandwiches. Cottage cheese is often featured with fresh fruits as a salad. Sliced or grated cheese is used on canapés and appetizers. Cheese is used to fill celery sticks, fruits, and is also an ingredient in salad dressings.

### *Preparing Cheese and Cheese Dishes*

For use uncooked cheese is often cut with a knife or cheese cutter into slices, strips, or chunks. Cutters are used to cut a variety of shapes. Cheese is grated coarsely or finely using different size graters. If partially frozen, cheese can be grated in a food processor. Soft cheeses, such as cream cheese, may be softened to room temperature and used as a spread or blended with other foods.



In cooking, cheese can be used as an ingredient or as a topping on a cooked dish. Cheese protein, like egg protein, coagulates when heated and becomes tough and rubbery when overcooked. Cheese should be cooked at a low temperature for a short time. When added to other ingredients, it should be cut into small pieces so that it will melt quickly and blend with other foods. Shred, grate, or slice cheese before adding it to other foods. Cut processed cheese into cubes. High temperatures and overcooking cause cheese to become tough and stringy and may cause the fat to separate and drain from the cheese. Cheese dishes should be served hot immediately after cooking.

For best results, cook cheese in a double boiler over simmering water or bake it in an oven at low temperature (325 to 350°F). When cooking cheese over direct heat, use a low temperature and stir constantly to prevent scorching. When cooking cheese or cheese dishes, it is best to heat the mixture just long enough to melt the cheese. When making cheese sauce, the cheese should be added after the white sauce is completely cooked and heated only enough to melt the cheese.

In some foods the cheese is protected from the heat of cooking. When cheese is used as a topping, a thin layer of buttered bread crumbs will protect it. In a pizza, which is cooked in a hot oven, the cheese may be covered with a sauce. In a grilled cheese sandwich, it is protected by the bread. In pastry and biscuits, it is protected by the dough during baking.

◆ **Essential Questions:** ◆
**Cheese Cookery**

1. Why is cheese cooked at a low temperature for a short time?
2. How should cheese be cooked?

## CARE, SERVICE, AND STORAGE OF CHEESE

Store cheese tightly covered or wrapped in the refrigerator. The flavors of strong cheeses can be absorbed by other foods, and cheese can readily absorb flavor from other foods. In addition, cheese dries out very quickly. The butterfat in natural cheese melts at room temperature giving the cheese a greasy look. If improperly stored or stored for too long a time, cheese may grow mold on its surface. Once this occurs, the flavor of the cheese may change making it unfit for consumption.

Soft cheeses spoil more quickly than hard and semi-hard cheeses. Soft, unripened cheese like cottage cheese and ricotta will spoil unless used in a few days. Cream cheese should be used within two weeks. These cheeses should be used before the expiration date marked on the package, while other cheeses will last up to several months if proper care is taken.

Cheese dishes, like egg dishes, cannot be stored and reheated successfully. They should be served immediately.

### ◆ Essential Questions: ◆
### Care, Service, and Storage of Cheese

1. How is cheese stored?
2. What happens when cheese dishes are reheated?

## Chapter Highlights

- Eggs are graded for freshness and size. USDA grades are Grade AA fro the freshest egg, followed by Grade A and Grade B. The six egg sizes are peewee, small, medium, large, extra large, and jumbo.
- Eggs may be purchased fresh, frozen, and dried. Whole eggs, egg whites, and yolks may be purchased in liquid, frozen, and dried forms.
- The principle of egg cookery is to use low to moderate heat and a short cooking time. High temperatures and overcooking cause the protein to toughen, curdle, and discolor.
- Eggs prepared as main dishes are usually grouped into six methods – cooking in the shell, frying, poaching, baking, scrambling, and preparing omelets.
- An omelet is a mixture of eggs, salt, and pepper cooked in a sauté pan. Omelets are made one at a time and may be plain or fluffy.
- In addition to their uses as main dishes, eggs are used as ingredients in a variety of recipes. Eggs are used to clarify, bind, emulsify, thicken, coat, or leaven.
- Fresh eggs should be kept under refrigeration until used. Eggs should be stored in their original carton. Egg dishes should be served immediately.
- To prevent Salmonella food poisoning, a number of food safety guidelines should be followed when using eggs and egg products.
- Cheeses are classified as natural cheeses, processed cheeses, pasteurized cheese food, and imitation cheeses.
- Cheeses also are classified as hard, semi-hard, soft, or semi-soft. Cheese is purchased in blocks, bricks, loaves, moons, half-moons, rolls, or links, and sliced, grated, shredded, or cubed forms.
- The USDA developed quality standards for cheddar and Swiss cheeses. The grades for cheeses are based on flavor, texture, appearance, and color. Cheese is either USDA inspected only or both inspected and graded.
- Cheese has a variety of menu uses. It can be served alone, combined with other foods, the chief ingredient in a dish, or grated and sprinkled on top of other foods.
- Cheese may or may not be cooked in food preparation. Cheese is used uncooked in a variety of cold foods. It may be cut with a knife or cheese cutter into slices, strips, chunks, or grated. Serve cheese at room temperature.

# Chapter 28

# Vegetables and Fruits

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

## Chapter Vocabulary

au gratin
blanching
carton
crate
dehydrated
dicing
drupes
flat
free steamer
legumes
lug
mincing
pit
pomes
pounds per square inch (psi)
sautéed
scalloped
shredding
slicing
stir-frying

## SELECTING VEGETABLES AND FRUITS

A variety of vegetables and fruits are served in foodservice establishments. Modern methods of processing, transportation, and storage make vegetables and fruits available in fresh, frozen, canned, dried, and dehydrated forms throughout the year. Vegetables and fruits are used in meal preparation, not only for their nutritional importance, but for the variety, flavor, and eye appeal that they bring to the menu.

### ***Kinds of Vegetables***

Vegetables are classified in several ways – part of plant, color, flavor, and moisture content. Table 28.1 illustrates these classifications and gives examples of vegetables in each.

## Vegetables

| Characteristics | Examples |
|---|---|
| **Part of Plant** | **Types of Vegetables** |
| Root or Tuber | Beets, carrots, parsnips, potatoes, radishes, rutabagas, turnips |
| Bulb | Garlic, leeks, onions, scallions |
| Stem | Asparagus, celery, mushrooms, rhubarb |
| Leaf | Brussels sprouts, cabbage, chard, kale, lettuce, parsley, spinach, watercress |
| Flower | Broccoli, brussels sprouts, cauliflower |
| Pod/Seed | Beans, corn, peas, rice, soybean |
| Fruit | Cucumbers, eggplant, okra, peppers, squash, tomatoes |
| **Color** | **Types of Vegetables** |
| White | Cauliflower, potatoes, mushrooms, parsnips, white onions, white turnips |
| Yellow | Carrots, corn, pumpkins, some squash, sweet potatoes, rutabagas |
| Green | Asparagus, broccoli, brussels sprouts, cabbages, escarole, green peppers, leaf vegetables, peas, spinach |
| Red | Beets, radishes, red cabbages, red onions, red peppers, tomatoes |
| **Flavor** | **Types of Vegetables** |
| Strong-flavored | Broccoli, brussels sprouts, cabbage, cauliflower, onions, parsnips, rutabagas, spinach, turnips |
| Mild-flavored | Asparagus, beans, beets, carrots, corn, lettuce, mushrooms, peas, potatoes, squash |
| **Moisture Content** | **Types of Vegetables** |
| High | Asparagus, beets, broccoli, brussels sprouts, cabbage, carrots, cauliflower, corn, eggplant, green beans, green peas, lettuce, mushrooms, onions, peppers, pumpkins, radishes, rutabagas, spinach, summer squash, Swiss chard, tomatoes, turnips, zucchini |
| Low | Lima beans, okra, parsnips, potatoes, acorn squash, yams |
| Dry | Dried beans, dried peas, freeze-dried vegetables , lentils |

*Table 28.1*

## Kinds of Fruits

Fruits are classified by their shape, structure, and other characteristics. ***Pomes*** are fruits with a smooth skin that covers a thick fleshy area surrounding a core containing seeds. ***Drupes*** are fruits which contain a large single seed or ***pit***, surrounded by juicy flesh. Berries are small, juicy fragile fruits with seeds embedded in the flesh. Citrus fruits have juicy flesh that is divided into sections by membranes. They usually have a thick skin and a tart flavor. Melons have a tough skin surrounding a thick flesh. Seeds are located in the center of the melon. Tropical fruits include a variety of fruits that grow only in very warm areas. Table 28.2 has examples of fruits for each characteristic.

## Forms of Vegetables and Fruits

Vegetables and fruits are available fresh, frozen, canned, or dried. A foodservice establishment may use any of these forms and purchase some vegetables and fruits in more than one form.

**Fresh.** Some fresh vegetables and fruits are available at any time during the year. Others are available only at certain times or seasons. Refrigeration and transportation make many fruits available when they are not in season locally. However, they are often more expensive.

Fresh vegetables and fruits should be at the peak of quality and ready to use. They should look fresh, firm, and bright in color. Their shape should be uniform. They should be neither underripe (too hard) nor overripe

### Fruits

| **Characteristics** | **Examples** |
|---|---|
| Pomes (with cores) | Apples, cranapples, pears, quince |
| Drupes (with pits) | Apricots, cherries, nectarines, peaches, plums |
| Berries | Blackberries, blueberries, cranberries, grapes, raspberries, strawberries |
| Citrus fruits | Citrons, grapefruits, kumquats, lemons, limes, oranges, tangerines, tangelos |
| Melons | Cantaloupes, Casaba melons, honeydews, muskmelons, Persian melons, watermelons |
| Tropical fruits | Avocados, bananas, dates, figs, kiwi fruits, mangos, papayas, persimmons, plantains, pomegranates, pineapples |

*Table 28.2*

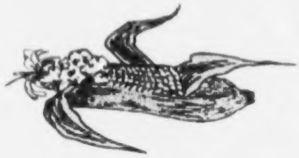
(too soft). They should also be free of bruises and soft spots. They should show no signs of rot or decay.

Fresh vegetables and fruits are purchased in cartons, lugs, or flats. A ***carton*** is a large, heavy cardboard box in which the vegetables or fruits are placed either wrapped or unwrapped. The number of pieces per carton may be indicated. A ***lug*** is a shallow cardboard or wooden box used for packing easily bruised vegetables and fruits, such as tomatoes and peaches. A lug holds about 30 lbs. loosely packed. Vegetables and fruits packed in lugs may be numbered by size. The size of the fruit gives an indication of the number of pieces in the lug. For example, a lug of tomatoes marked 5/5 will have five tomatoes across and lengthwise or twenty-five tomatoes in a layer. A lug is packed in two layers, so there would be fifty tomatoes in a lug. A ***flat*** is a carton that holds twelve baskets. Cherry tomatoes or berries are usually packed in flats. Each basket holds about 1 lb. Some vegetables and fruits, like potatoes, onions, and cooking apples are packed in sacks. Vegetables purchased in small amounts like parsley and watercress are packed in bunches. Some solid fruits such as oranges and grapefruits are packed in a crate. A ***crate*** is a large, oblong box separated into two sections.

Fresh vegetables and fruits are graded by number. Number one is the best grade. However, the grade only indicates the quality at the time of grading. Produce which has not been properly stored and handled may be a lower grade than indicated.

Many fresh vegetables and fruits spoil quickly and must be used shortly after purchase. Some must be kept under refrigeration. Others may be stored in a dry storage area. Potatoes should be stored in a cool, dry, dark place between 55° to 60°F (13° to 16°C). Avoid refrigeration since temperatures less than 45°F (7°C) change potato starch to sugar.

**Frozen.** Frozen vegetables and fruits are available cut, sliced, diced, or whole. They are frozen alone or combined with a sauce. Two or more vegetables or fruits are often combined. For example, "frozen mixed vegetables" usually is a combination of carrots, corn, and green peas or green beans.



Frozen vegetables and fruits are made from Grade A fresh produce. Vegetables for freezing are picked when young and slightly ripe. The vegetables are blanched, and quick-frozen immediately. ***Blanching*** means that steam is applied to seal the outside of the vegetable and shorten the future cooking time. The vegetables are then frozen sealing the enzymes that cause development of poor color, texture, and flavor during storage. Blanching also wilts and softens vegetables making them easier to package. Frozen potatoes for deep fat frying are especially popular in foodservice. Fruits and berries are frozen when young and fully ripe. They are quick-frozen at the peak of flavor and color. Fruits may be frozen with or without sugar sweetening. Frozen concentrated fruit juices provide fresh-tasting juice. Because of pre-preparation, frozen vegetables and fruits save preparation time in the foodservice establishment.

Frozen vegetables and fruits are packaged in sealed 2 1/2 or 5 lb. cartons. The cartons are sealed to prevent freezer burn and dehydration. Freezer burn occurs when the seal is inadequate. The food becomes dehydrated in spots where moisture is lost. Frozen vegetables and fruits should be kept at a temperature of 0°F or lower until ready for use.

**Canned.** Canned vegetables and fruits are available in a variety of forms, such as whole, cut up, diced, or sliced. Vegetables usually are packed in lightly salted water unless labeled as "No Salt Added." Fruits are packed in a heavy sugar syrup, a light sugar syrup, or the fruit's own juice. The label provides information about both the form and quality of the vegetables or fruits. Canned vegetables and fruits are easier to prepare than fresh or frozen ones. However, their color and flavor are not as natural as is found in fresh and frozen varieties.

Vegetables and fruits, canned according to United States government standards, may have a grade of quality on the label. The grade is listed as a letter or a descriptive word. The grade purchased depends on the intended use, with the lower grades being used in mixed food combinations such as soups. The following grades are used:

- ***U.S. Grade A Fancy.*** This grade indicates that the product is of excellent quality. It has the best color and flavor. The pieces are perfect and uniformly sized.
- ***U.S. Grade B Choice.*** Another term for this grade is Extra Standard. This grade is for a product of good flavor and color. The pieces may have some imperfections. The size of the pieces may vary.
- ***U.S. Grade C Standard.*** This grade indicates a product of poor color and flavor. The pieces are imperfect and vary in size.

Canned vegetables and fruits should be stored in a cool, dry storeroom. Changes in color, texture, and taste occur when canned goods are stored at room temperature or above. If long-term storage is necessary, a cool storage area 45-60°F is needed.

Avoid using any canned vegetable or fruit that shows signs of spoilage. Signs of spoilage include:

- the can bulges at the sides or top
- the contents are mushy
- the canned liquid spurts from the can during opening
- the contents smell sour

Never taste canned foods that may be spoiled; a deadly form of food poisoning called botulism may be present in the food.

**Dried and Dehydrated.** Most dried vegetables are legumes. ***Legumes*** include lentils, soybeans, peas, and beans. Dried beans and peas are graded US #1, #2, and #3. The best quality products, those graded US #1, are free of foreign objects, such as sticks, stones, and dirt. They have no broken pieces, split or damaged seeds. Dried legumes should be free of weevil damage which is indicated by small holes in the seeds. See Table 28.3 for examples of legumes.

***Dehydrated*** vegetables and fruits are fresh vegetables from which most of the water has been evaporated. Dehydrated vegetables include potato products, onions, green peppers, and mushrooms. Dehydrated fruits include raisins, prunes, peaches, apricots, and apples. They are graded the same as fresh fruits. Dehydrated products save labor costs and are often acceptable substitutes for fresh produce.

Dried and freeze-dried fruits and vegetables should be stored in tightly sealed containers in a cool, dry place. Observing these storage procedures helps to prevent infestation by insects, fermentation, or growth of molds.

### ◆ Essential Questions: ◆
### Selecting Vegetables and Fruits

1. What are the parts of plants that may be eaten as vegetables? Give examples of vegetables from each part of the plant.
2. What is the difference between a pome and a drupe?

### Legumes

| Type | Description and Use |
|---|---|
| Black beans | Sometimes called black turtle-soup beans; used in thick soups and in Oriental and Mediterranean dishes. |
| Black-eyed peas | Also called black-eyed beans or cowpeas, small, oval-shaped, and creamy white with a black spot on one side; used primarily as a main-dish vegetable. |
| Garbanzo beans | Also known as chick peas; nut flavored and commonly pickled in vinegar and oil for salads; may also be used as a main-dish vegetable. |
| Great Northern beans | Larger than but similar to pea beans; used in soups, salads, casserole dishes, and baked beans. |
| Kidney beans | Large, red, and kidney-shaped; popular for chili con carne; used also in salads and many Mexican dishes. |
| Lima beans | Broad, flat, and different sized; used as main dish vegetable in casseroles. |
| Navy beans | Broad term that includes Great Northern pea, flat small white, and small white beans |
| Pea beans | Small, oval, and white; hold shape even when cooked tender; used in baked beans, soups, and casseroles. |
| Pinto beans | Beige-colored and speckled; of the same species as kidney beans and red beans, used in salads, chili, and many Mexican dishes. |
| Red and pink beans | Pink beans more delicate in flavor than red beans; both used in many Mexican dishes and chili. |
| Dry split peas | Specialty grown whole peas from which skin is removed and then pea broken in half; used mainly for split pea soup but combine well with many different foods. |
| Lentils | Disk-shaped and about the size of a pea; short cooking time (about thirty minutes), combine well with many different foods. |

Source: *Introductory Foods*, M. Bennion, Copyright © 1995 by Prentice Hall. Reprinted by permission of Prentice Hall.

***Table 28.3***

## MENU USES OF VEGETABLES AND FRUITS

Vegetables and fruits add color, texture, flavor, size, and shape as well as nutrients to a meal. They are served at any meal during the day or during any portion of the meal.

Most often, vegetables are served as an accompaniment to a main dish. Sometimes they are served as a main dish. Vegetables are used in soups, salads, snacks, and even desserts. Vegetable juices are often served as appetizers as are a variety of fresh and cooked vegetables. Vegetables are also attractive garnishes for other foods.

Fruits are most popular served fresh. Fresh fruits are used as appetizers, as snacks, in salads, and as desserts. Fruits are often served as accompaniments to other foods. For example, cranberries are usually served with turkey and apples with pork roast. Fruits are used as ingredients in soups, breads, sauces, beverages, and desserts. They make attractive garnishes for a variety of other foods.

**◆ Essential Questions: ◆**
***Menu Uses of Vegetables and Fruits***

1. How can fruits and vegetables complement menus?
2. What are some examples of fruits used as appetizers and as accompaniments to other foods?

## PREPARATION OF VEGETABLES AND FRUITS

Both fruits and vegetables require preparation before use. Thorough washing removes any dirt or remaining insecticide spray. Unusable tops or outer leaves are discarded. Scraping or paring may be needed to remove the skin or peel. In many vegetables and fruits, vitamins and minerals are concentrated just under the skin. Pare thinly so the nutrient loss will not be great. Leafy and stemmed vegetables are usually crisped before using. To crisp leafy and stemmed vegetables, they should be washed thoroughly in cold water and patted dry with a cloth or paper towel.

The clean, dry vegetables should be wrapped in a clean towel and placed in the refrigerator crisper to chill. The wrapped greens should be stored in a plastic bag on a refrigerator shelf.

Vegetables and fruits are cut into a variety of shapes depending on their intended use. They may be diced, minced, shredded, or sliced. Some are left whole. ***Dicing*** means cutting into cubes. ***Mincing*** means chopping very fine. ***Shredding*** means cutting into thin strips. Thin strips are called julienne, a term used in French cooking. ***Slicing*** refers to cutting across or at an angle.

Cut fruits with low acid content, such as bananas, apples, and pears, turn dark when exposed to air. To prevent this discoloration, sprinkle the cut surface with an acid fruit juice such as lemon, lime, or pineapple.

**◆ *Essential Questions:* ◆**
***Preparation of Vegetables and Fruits***

1. Why is thorough washing of fruits and vegetables important before preparing?
2. What does the French term "julienne" mean?

## COOKING VEGETABLES AND FRUITS

The goal when cooking vegetables and fruits is to retain the maximum amount of their original food value, color, flavor, and texture. This goal applies to all forms of vegetables and fruits – fresh, frozen, canned, dried, and dehydrated. Observing a few basic principles will ensure that these qualities are retained.

### *Cooking Principles*

Cooking softens the cellulose, or structure, of vegetables and fruits making them less crisp. The starch in the vegetable or fruit absorbs water, swells, and becomes more soluble. Changes in color and flavor occur, and nutrients dissolve in the cooking liquid. To retain their best qualities, cook fresh vegetables and fruits in as little water as possible, for as short a time as possible.

Cooking in little or no water reduces the loss of B vitamins, vitamin C, and minerals which dissolve in water. Covering the pan helps prevent scorching and evaporation of the cooking liquid. Strong-flavored vegetables like cabbage may be cooked in enough water to cover the vegetable to make their flavor milder. However, more water-soluble nutrients will be lost. The cooking water should be saved for use in soups, sauces, and gravies.

Overcooking causes loss of nutrients, color, and flavor, and results in a mushy texture. For this reason, vegetables and fruits should be cooked only until they are just tender. Overcooking causes the color of vegetables and fruits to become drab. It can cause strong-flavored vegetables to develop an unpleasant flavor. Overcooked vegetables and fruits lose their texture and shape and become mushy.

The color of some vegetables and fruits is affected by exposure to air, acid, or heat. White vegetables like potatoes, cauliflower, and turnips discolor when cut areas are exposed to air. Potatoes should be cooked in a covered pan in just enough salty water to cover the vegetables. Strong-flavored white vegetables should be cooked uncovered until just tender. Red vegetables like beets and red cabbage contain a substance that turns blue when cooked in water. Red vegetables should be cooked in a small amount of water with an acid like vinegar or lemon juice added to brighten and deepen the red color. Because tomatoes are naturally acid, they do not lose their color in cooking. Green vegetables become dull when exposed to acid or when they are overcooked. Green vegetables naturally contain some acid that can dull their color during cooking. The acid will dissipate in the steam if the vegetable is cooked uncovered. For this reason, cook green vegetables uncovered in a small amount of water until just tender. Never add baking soda to preserve the green color since it will destroy vitamins. Yellow and orange vegetables, such as carrots, sweet potatoes, and corn, show little change in color due to cooking.

Vegetables and fruits should be served as soon as possible after cooking. For this reason, they should be cooked in small quantities as close to serving time as possible. Lengthy holding of warm vegetables and fruits causes color loss and mushy texture.

The effects of moist heat on the cellulose of fruit is reduced by sugar. When fruits are cooked in moist heat, they break apart. When fruit is cooked in sugar or sugar syrup, it will retain its shape. The sugar strengthens the cellulose structure and keeps the fruit from falling apart. The decision of whether to add sugar before or after cooking fruit should be based on the desired texture of the cooked fruit product.

## Cooking Methods

Fresh and frozen vegetables and fruits are boiled, steamed, baked, sautéed, fried, or broiled. They also may be cooked in a microwave oven. Fresh fruits are rarely cooked on top of the range in foodservice, but often are baked. See Table 28.4 for suggested vegetable seasonings and flavorings that may be added to cooked vegetables.

Canned vegetables and fruits are completely cooked in the canning process. They may be reheated in their own liquid or used as ingredients to a recipe.

Dried and dehydrated vegetables and fruits must be rehydrated or reconstituted with water. Dried vegetables, such as whole beans and peas, are soaked in water, then boiled. Lentils and split peas do not need to be soaked before cooking. Dehydrated vegetables may be reconstituted with water before cooking or added to dishes high in liquid, such as soups. Dried and dehydrated vegetables can be boiled, simmered in water, or baked.

**Vegetable Seasoning and Flavorings**

| | |
|---|---|
| **Asparagus** | Brown butter, lemon juice, mustard sauce, parmesan cheese; artichokes, hard-cooked egg, mushrooms, peas, |
| **Beans, green** | Dill, basil, tarragon, oregano, garlic, brown butter, soy sauce; almonds, sesame seed, onion, tomato, celery, mushrooms, bacon |
| **Beans, Lima** | Oregano, sage, thyme, sour cream, cheddar cheese; corn, peas, onions, mushrooms, pimento, bacon |
| **Beets** | Lemon, allspice, caraway, cloves, dill, ginger, horseradish, bay leaf, orange, sour cream, onion |
| **Broccoli** | Lemon, mustard sauce, almonds, buttered toasted bread crumbs, hard-cooked egg |
| **Brussels sprouts** | Caraway, dill, parmesan cheese, cheddar cheese, chestnuts |
| **Cabbage** | Caraway, celery seed, dill, mustard, garlic, bacon, ham, carrots, onion |
| **Carrots** | Parsley, dill, fennel, tarragon, ginger, nutmeg, bay leaves, caraway, mint, orange, celery; peas, zucchini |
| **Cauliflower** | Dill, nutmeg, mustard, curry, cheese, tomato sauce; hard-cooked egg, peas, almonds |
| **Celery** | Parsley, tarragon, onion, green or red pepper, potatoes |
| **Corn** | Chili powder, mild cheddar or jack cheese, tomato, bacon, lima beans |
| **Cucumber** | Dill, garlic, mint, tarragon; peas |
| **Eggplant** | Garlic, marjoram, oregano, parsley, dill, sherry, parmesan cheese, cayenne, heavy cream; peas, spinach, artichokes, green beans |
| **Mushrooms** | Nutmeg, parsley, lemon, paprika, dill, sherry, parmesan cheese, cayenne, heavy cream; peas, spinach, artichokes, green beans |
| **Okra** | Garlic, coriander, sage; tomatoes, com |
| **Onions** | Nutmeg, sage, thyme, cheese sauce, sour cream; peas |
| **Peas** | Mint, basil, dill, sage; mushrooms, pearl onions, turnips, potatoes, carrots, water chestnuts, Jerusalem artichokes |
| **Spinach** | Nutmeg, garlic, heavy cream; mushrooms, hard-cooked egg, cheese |
| **Squash, summer (including zucchini)** | Cumin, basil, oregano, mustard seed, rosemary, garlic, parmesan cheese, parsley; tomato, carrots (with zucchini), onion, almonds, walnuts |
| **Squash, winter** | Cinnamon, nutmeg, allspice, cloves, ginger; apples, bacon, pecans |
| **Sweet potatoes** | Allspice, cinnamon, cloves, nutmeg, ginger, brandy, orange; almonds, apples bananas |
| **Tomatoes** | Basil, bay leaf, garlic, celery seed, oregano, thyme, rosemary, chili powder; peppers, black olives |
| **Turnips** | Parsley, chives, nutmeg; mushrooms, potatoes, peas |

*Table 28.4*

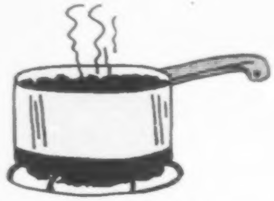
Fresh vegetables are often blanched or slightly precooked before cooking. Blanching enhances the color of green vegetables. It makes strong-flavored vegetables taste milder. Vegetables are blanched by placing them in enough boiling water to cover, returning the water to a boil, draining, then cooking.

## Boiling

Boiling is the most popular method for cooking fresh vegetables. Boiled is used for fresh, frozen, canned, dried, or dehydrated vegetables and fruits. The steps for successful boiling of fruits and vegetables include the following:

1. *Bring salted water or liquid to a boil before adding fresh, frozen, or canned vegetables or fruits.* Spinach and other fresh leafy vegetables and juicy fruits, such as berries and rhubarb, need no added water. Most vegetables and fruits need only enough water to cook. Older root vegetables that need longer to cook require more water

than young, tender vegetables. Strong-flavored vegetables may be covered with water. Frozen vegetables require less water than fresh vegetables. They have already been blanched and require less cooking time. Also, the ice crystals in the product provide some of the water. Canned vegetables should be reheated in their own juices. Canned vegetables are usually seasoned with salt already. Drain the juices into a sauce pan and boil until the volume is reduced by one half. This concentrates the flavor and nutrients. Dried vegetables are soaked in about two gallons of water per pound, then cooked in the same water. Dried fruits are soaked in cold unsalted water for several hours.



2. *Bring the water or liquid quickly back to the boiling point.* Cover yellow and red vegetables. Do not cover white and green vegetables. Do not boil dried fruits, since boiling will toughen the fruit and cause it to become mushy.

3. *Start timing when the water returns to the boiling point. Cook until just tender.* Refer to a timetable for the cooking time required for boiling fresh or frozen vegetables. Heat canned vegetables only long enough to bring to serving temperature. Cook dried vegetables and fruits slowly until tender. Add more water, if needed. Follow package directions for cooking dehydrated and freeze-dried products.

4. *Drain cooked vegetables or fruits and place in serving pans. Add seasonings.* Save the cooking water to use in soups and sauces, or serve it with the vegetable or fruit. Melted butter or margarine is added to most boiled vegetables. Spices and herbs may be added for additional flavor. Many vegetables are served with a cream sauce. Dried fruits are naturally sweet and require very little sugar. If more sweetness is desired, add the sugar after the fruit is cooked.

Sometimes boiled (or steamed) vegetables are served mashed or whipped. Mashed potatoes are especially popular. To make mashed potatoes:

1. Drain boiled potatoes and place in a mixing bowl.
2. Break up the pieces with a paddle.
3. Whip on low speed until free of lumps.
4. Add butter, salt, and pepper and mix thoroughly.
5. Add cream or hot milk until desired consistency is reached.
6. Whip on high speed until light and fluffy.

Canned rather than fresh fruits are usually used in foodservice when cooked fruits are needed. When fresh fruits are cooked in water, they lose their shape, and with enough cooking fall apart. This is desirable when making fruit sauces such as cranberry sauce.

When cooked fruits are needed, canned rather than fresh fruits are usually used in foodservice. When fresh fruits are cooked in water, they lose their shape and with enough cooking, they fall apart. However, this is desirable when making fruit sauces such as cranberry sauce or apple sauce.

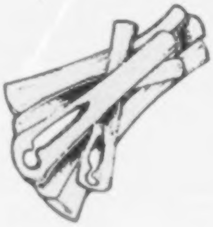
When fruits are cooked with sugar, they will retain their shape. When preparing cinnamon apple rings or stewed apples or peaches, the fruit is cooked with sugar or in a sugar syrup. The desired texture determines whether sugar is added before or after cooking fruit.

## Steaming

Steaming is an excellent method for cooking vegetables. It is fast, retains nutrients, and preserves the color of the vegetables. Fresh and frozen vegetables can be cooked in a steam-jacketed kettle. Canned vegetables can be heated in a steam-jacketed kettle. Fresh and frozen vegetables can also be cooked in a pressure steamer or by free steam.

**Steam-jacketed Kettle.** Cooking a quantity of vegetables in a steam jacketed kettle is faster than boiling. The steam circulates around the pot of vegetables without touching them. To cook in a steam-jacketed kettle, the water is brought to a full boil in the kettle. Then the vegetables are added and the water returned back to a boil. The heat is reduced and the vegetables are cooked until tender. White or green vegetables should not be covered. The vegetables should be removed from the kettle as soon as they are done. Finally, the vegetables should be seasoned and served.

**Pressure Steamer.** A pressure steamer is used for cooking most vegetables in foodservice. However, it usually is not used for delicate, quick-cooking vegetables like spinach. To use a pressure steamer, the vegetables are placed in steamer pans or baskets. A small amount of water is added if solid pans are used. No water is needed if perforated baskets are used. The steamer pans or baskets are placed and locked in the steamer and the steamer is turned on. The pressure should be set according to the manufacturer's directions for the required ***pounds per square inch (psi)***. As the pressure increases, so does the temperature. Timing begins when the steamer reads the proper cooking temperature. The timer should be set according to the manufacturer's directions. The timing must be exact. A few seconds of overcooking will cause colorless, mushy vegetables. Cooking for a short time at high temperature results in naturally-colored vegetables. Never attempt to open the steamer until the pressure reaches zero. Add seasonings and serve vegetables immediately.



**Free Steamer.** Vegetables may be cooked by free steam (steam which is not under pressure). In a ***free steamer***, a perforated pan fits into a brazier. The steam circulates around the food in the pan, slowly cooking it. Cooking vegetables by free steam requires as much or more time than boiling and much more time than cooking by steam under pressure. Green vegetables lose their color if overcooked under free steam.

## Baking

Vegetables and fruits may be baked whole or in pieces. Baking in their skins is a popular method for cooking solid, low-moisture vegetables like potatoes and winter squash. Potatoes and yams are usually baked whole.

Baking time can be cut in half by inserting a stainless steel skewer into the potato. To save time potatoes are frequently steamed in their skins until almost done. Then they are wrapped in foil and baked in the oven until soft.

Potatoes are available already baked and stuffed. Only reheating is needed, but the quality may be lower than that of freshly baked potatoes. To make stuffed potatoes, the insides are removed from halved potatoes. The insides are prepared as for mashed potatoes. The potato shells are refilled with the mashed potato mixture, sprinkled with paprika and parmesan cheese, and then spread with butter. The potatoes are then reheated in a hot oven for ten to fifteen minutes until brown.

Fresh fruits are sometimes baked. Some fruits are baked whole. Apples are cored before baking, and the upper quarter may be peeled, if desired. The core of baked apples is often stuffed with brown sugar and cinnamon. Apples and pears also may be baked in a honey or sugar syrup. For pears, the syrup is often mint-flavored and colored green. Apples are often glazed with sugar syrup, colored, and flavored with red cinnamon candies.

Canned, dried, frozen, or fresh fruits can be combined with other ingredients to make rich baked desserts. Cobblers, crisp Betty's, and turnovers are examples of baked fruit desserts. Date, orange, cranberry, blueberry, and banana quick breads are popular. These special breads use canned, frozen, fresh, mashed, or candied fruits. Fruit pies are made from fresh, canned, frozen, or dried fruits.

Other vegetables and fruits are cut in pieces and baked in casseroles. ***Scalloped*** vegetables and fruits are baked with a sauce or other liquid. Potatoes and apples are popular scalloped. ***Au gratin*** vegetables are sprinkled with buttered bread crumbs or grated cheese and baked until brown. Scalloped and au gratin vegetables are also available in dehydrated form.

## Sautéing

Some vegetables and fruits are ***sautéed*** or cooked in a small amount of butter, margarine, or oil. In Chinese cooking, this technique is called ***stir-frying***. In stir-frying, vegetables are cooked quickly until just done and seasoned with soy sauce.

Sautéed potatoes are a popular menu item. Potato slices are usually called American-fried cottage potatoes, or home-fries. Sautéed or diced potatoes are called hash browns.

Sautéing may be used as a preliminary step in preparation. Onions, mushrooms, and green peppers are often sautéed before being added to other foods. Cooked vegetables, such as green beans, may be sautéed in butter to add flavor.

## Deep fat Frying

Some vegetables are fried in deep fat. French fried or deep-fried potatoes are especially popular in fast-food restaurants. They are frequently served with steaks.

Most foodservice establishments use ready-to-fry potatoes to save time and energy. Frozen potatoes may be cut in long strips for regular fries, thin strips for shoestring fries, or thick pieces for thick-steak fries. They may be straight-cut, crinkle-cut, or wedge-cut. Potato rounds are shredded potatoes formed into bite-sized pieces. Frozen potatoes should be kept in the freezer until ready for use.

Fresh potatoes prepared for frying may be cut into iced water to keep them crisp and to prevent discoloration. However, they should not be soaked. Soaking prolongs cooking time and results in soggy, oily fries. Potatoes should be dried before cooking. Fresh potatoes may be blanched first by frying until tender, but not browned. Blanched potatoes may be refrigerated up to two days before use. Blanched potatoes should be heated to room temperature before browning. Blanched or unblanched potatoes should be fried in hot fat (375-380°F) in baskets no more than half full. Blanched potatoes cook much faster than unblanched ones.

When deep fat frying potatoes in any form, the basket should be shaken to drain excess fat. The potatoes should be salted before serving. The salt should be applied away from the grease in the fryer. Deep-fried potatoes can be held briefly under an infrared holding lamp. Lengthy holding results in soggy potatoes.

Other vegetables like onions, eggplant, cauliflower, broccoli, and squash are often dipped in batter and fried in deep fat. Batter mixed with pieces of vegetables or fruit and fried in deep fat is called fritters. Corn fritters and apple fritters are among the best known.

### Broiling

Tomatoes are the most popular broiled vegetable. Thickly sliced or halved tomatoes are topped with buttered crumbs and broiled until brown. Some scalloped vegetables are broiled for a short time to brown the tops. Broiled grapefruit halves are served as desserts. The seeds are removed and the section loosened. The halves are spread with honey or brown sugar. The grapefruit halves are broiled lightly until browned and served immediately.

### Microwaving

When only a small quantity of cooked vegetables is needed, microwaving is quick and easy. Microwaving preserves the color, texture, and nutrients of the vegetable. To cook vegetables in the microwave oven, cut the vegetables evenly in small pieces and place in a ceramic dish. Add two tablespoons of water to fresh vegetables, none to frozen vegetables. Cover the vegetables and cook on high power. Stir after half the cooking time. Microwaving can also be used for reheating vegetables.

**◆ Essential Questions: ◆**
**Cooking Vegetables and Fruits**

1. What is the goal when cooking vegetables and fruits?
2. What principles should be practiced when cooking vegetables and fruits?

## SERVING AND GARNISHING VEGETABLES AND FRUITS

Vegetables should be served immediately after cooking. Many are naturally colorful and require no additional garnish. When a garnish is desired, spices and herbs may be used to add flavor and color. Vegetables can be combined to make them more colorful. Some popular combinations include green beans and mushrooms, carrots and celery, cauliflower and raw peas, raw potatoes and beans, peas and pearl onions, and creole tomatoes. Sauces add flavor, color, and texture. Almonds, mushrooms, sour cream, pearl onions, and buttered bread crumbs are appropriate garnishes for many vegetables.

Fruits may be garnished with whipped cream, ice cream, a dessert sauce, or a sprinkling of chopped nuts or shaved chocolate. A sprig of fresh mint adds appeal to many fruits. Fruits of a contrasting color are also appropriate garnishes. Maraschino cherries, strawberries, and mandarin orange slices are especially popular. Cake or cookie crumbs may be used to garnish cooked or canned fruits.

◆ **Essential Questions:** ◆
**Serving and Garnishing Vegetables and Fruits**

1. What are the procedures for serving and garnishing vegetables and fruits?
2. How can vegetables and fruits be attractively prepared?

## HOLDING AND STORING VEGETABLES AND FRUITS

Fresh vegetables used as appetizers or garnishes or in salads usually are prepared in advance and stored in the refrigerator. Prepared salads are kept on ice until served. Cooked vegetables should be prepared in small quantities and served immediately. Leftover vegetables should be refrigerated and used in soups or casseroles when appropriate. Leftover vegetable juices and cooking liquid can be used in soups and sauces.

Fresh fruits which darken after cutting should be treated with ascorbic acid or lemon juice to keep them bright. Fresh fruits should be kept cold until served. Frozen fruits should be thawed, unopened, in the refrigerator and used quickly, or they will spoil. Use frozen juices within two to three days after opening and preparing. Leftover fresh or frozen fruits should be discarded. Leftover cooked fruits should be refrigerated. Canned fruits and juices may be served at room temperature or chilled first. Canned fruits and juices become perishable after opening. Store any unused portions in airtight containers in the refrigerator and use up in two to three days. Dried fruits keep for about six months in dried form. Once cooked, dried fruits become perishable. Store unused portions in covered containers and use within a few days.

◆ **Essential Questions:** ◆
**Holding and Storing Vegetables and Fruits**

1. What is the procedure for using leftover fresh fruit?
2. What are the procedures for holding and storing vegetables?

## Chapter Highlights

- Vegetables are the parts of plants that may be used as food. They also include the fruits of some plants.
- Vegetables are classified by part of plant, color, flavor, and moisture content. Vegetables include the roots or tubers, bulbs, stems, leaves, flowers, pods and seeds, and fruit of edible plants. They may be white, yellow, green, or red. Some are strong flavored, others are mild flavored. The moisture content of vegetables varies.
- Fruits are classified by their shape, structure, and other characteristics. Fruits include pomes (with cores), drupes (with pits), berries, citrus fruits, melons, and tropical fruits.
- Vegetables and fruits are available in fresh, canned, and dried or dehydrated forms.
- Vegetables and fruits add color, texture, flavor, size, and shape as well as many nutrients to a meal. They are served at any meal and as any part of the meal.
- Vegetables and fruits must be washed before using. Unusable parts should be discarded. Many need scraping or paring. Leafy vegetables need crisping. Vegetables are cut into a variety of shapes depending on their intended use. Low-acid fruits must be treated to prevent discoloration.
- To retain their original food value, color, flavor, and texture, fresh vegetables and fruits are cooked in as little water as possible for as short a time as possible.
- Sugar reduces the effects of moist heat on the cellulose of fruit.
- Fresh vegetables are often blanched before cooking to enhance their color or to make their strong flavor taste milder.
- Steaming is a fast method for cooking vegetables that retains nutrients and preserves their natural color. Steaming is done in a steam-jacketed kettle, pressure steamer, or free steamer.
- Vegetables and fruits are baked whole or in pieces. Solid, low-moisture vegetables are baked whole in their skins or cut into serving-size pieces. For casseroles, vegetables and fruits are cut in pieces and are baked in a sauce or other liquid (scalloped) or are topped with buttered bread crumbs or cheese (au gratin).
- Sautéed vegetables are cooked in a small amount of butter, margarine, or oil. In Chinese cooking, this technique is called stir-frying.
- Vegetables should be served immediately after cooking. They may be garnished with spices and herbs, sauces, or other foods. Fruits may be garnished with whipped cream, ice cream, dessert sauces, nuts, mint, crumbs, or other fruits.

# Chapter 29

## Cereals and Pastas

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- al dente
- arborio rice
- basmati rice
- bran
- brown rice
- bulgar
- coated rice
- converted rice
- couscous
- durum wheat
- endosperm
- enriched
- enriched rice
- fortified
- germ
- gluten
- glutinous rice
- jasmine rice
- polenta
- refined
- wehani rice
- whole-grain/unrefined
- wild rice

Cereals and pastas are made from grains. Grains are the edible seeds produced by certain plants of the grass family. The principle grains are wheat, rice, oats, barley, rye, corn, and buckwheat (or Kasha which is popular in Jewish cooking). These grains also are referred to as cereal grains or cereals. Breakfast cereals, pastas (macaroni products), and flour are all made from cereal grains. Grains and grain products are inexpensive sources of energy for the body. They are easy to store and have a long shelf life.

## SELECTION OF CEREALS AND PASTAS

The seeds of all grains have the same basic structure. The three parts of the kernel are the bran, the endosperm, and the germ. The ***bran*** is the outside covering of the grain. It is made up of several layers. The bran supplies fiber and vitamins. The ***endosperm*** is the white, inner portion of the kernel. It is mostly carbohydrate but contains some protein. The **germ** is found at one end of the kernel. The germ is a rich source of vitamins, protein, and fat.

## Processed Grains

Processed grains may be either unrefined or refined. The terms **unrefined** and **whole-grain** mean the same thing. In unrefined grain products, all three parts of the kernel are kept together. Whole-wheat flour and whole-grain cereals are examples of unrefined or whole-grain products. Whole-grain products have a distinctive flavor and have a coarser texture than those made from refined grains. Because of the higher fat content of the germ, whole grain products are more difficult to keep and sometimes develop an unpleasant flavor.

**Refined** grain products contain the endosperm of the grain. The bran or hull of the grain and the germ are removed. To offset the loss of vitamins and minerals in the refining process, many grain products are **enriched** or restored. This means that the lost nutrients are put back into the grain product. In white rice the nutrients may be preserved by a parboiling treatment which draws the vitamins into the endosperm where they are retained. The resulting white rice is known as **converted rice**.

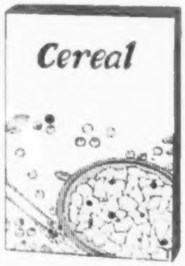
When more nutrients are added to the grain product than were removed during processing, the product is said to be **fortified**. More than 85 percent of all breakfast cereals are fortified.

## Weight of Product

Cereal products are usually purchased by weight rather than by size of package. Often products in the same size container have different weights. This is especially true of breakfast cereals. Some are puffed and may take more space than a compact cereal.

## Varieties Available

Breakfast cereals are made from corn, oats, rice, wheat, or a combination of grains. Both hot and cold cereals are available. Oatmeal and cream-of-wheat are popular hot cereals. Cold cereals may be rolled, flaked, puffed, or shredded. They come in a variety of shapes, flavors, and colors. Many have added sugar or salt. They may have other added ingredients, such as raisins, nuts, coconut, or dried fruits.



Rice is a very versatile food, served in a variety of ways. It may be brown, polished or white, enriched, converted, coated, or wild. **Brown rice** has only the hull removed during processing. It has a light brown color, crunchy texture, and nut-like flavor. It is available in regular and instant forms. Although instant rice cooks quickly, it does not hold well after cooking. Polished rice or white rice is polished until only the endosperm is left. **Enriched rice** has the nutrients replaced that were removed by polishing. Converted rice is treated to retain the nutrients present in the original grain. It is the most widely used type in foodservice. The grains stay firm and not mushy during holding periods in the steam table. Converted rice requires more water and cooking time. **Coated rice** is treated with glucose and talc to make the rice look more polished and improve its keeping qualities. **Wild rice** is not actually rice, although it somewhat resembles rice. Wild rice is the seed of a wild grass. It is usually blended with long-grain rice.

Specialty forms of rice include a variety from around the world. These include:

- ***Arborio rice*** - a short grain Italian variety.
- ***Basmati rice*** - a long grain rice with a nutty flavor used in India.
- ***Jasmine rice*** - a long grain white rice from Southeast Asia.
- ***Wehani rice*** - a red aromatic rice.
- ***Glutinous rice*** - a sweet, sticky rice used in China and Japan.

Other varieties of grains and grain products include the following:

- Wheat products - cracked wheat, whole wheat berries, ***bulgar*** (cracked wheat), farro, spelt, green wheat, and ***couscous*** (pronounced kouskous).
- Corn products - ***polenta*** (Italian-style cornmeal), hominy, grits, pozole, and blue corn.

The best pastas are made from ***durum wheat***. This wheat has a very high proportion of ***gluten*** (flour that has been washed to remove the starch). When mixed with water, the gluten becomes very elastic, making it easy to stretch and cut into interesting shapes. A variety of pasta or macaroni products are available. Pastas include familiar ones like spaghetti, macaroni, lasagna, ravioli, and hundreds of others. Noodles are different from other pastas because they contain eggs. Pastas come in four main shapes:

- tubes - macaroni, manicotti, and cannelloni
- rods - spaghetti, spaghettini, and vermicelli
- ribbon-like strips - lasagna, noodles, and fettuccine
- special or fancy shapes - shells, bows, and spirals

Figure 29.1 lists many commercial-type pasta shapes and uses.

## Menu Uses of Cereals and Pasta Products

Breakfast cereals usually are served at the morning meal. Some are served hot; others are served cold. In addition to their place on the breakfast menu, breakfast cereals are used as toppings on casseroles, or rolled into crumbs and used for breading meats, poultry, and fish. They are used as ingredients in cookies, quick breads, and special desserts.

Most often, rice is served as an accompaniment to meat, poultry, or fish, and occasionally is served hot as a breakfast cereal. It may be one of the main ingredients in baked dishes, and is frequently an ingredient in soups. Rice also is used in desserts.

Pastas or macaroni products can be used as a main dish like macaroni and cheese or chicken and noodles. Spaghetti or noodles can be used as an accompaniment instead of a potato. Pasta can also be used as an ingredient in a main dish, soup, or salad.

## Convenience Cereal and Pasta Products

A variety of convenience grain products are available. Convenience breakfast cereals range from ready-to-eat breakfast cereals, to partially precooked cereals, to instant cereals. Ready-to-eat cereals may be poured directly into the cereal bowl. Pre-cooked or quick-cooking cereals require only brief cooking. Instant cereals go directly into the cereal bowl, requiring only the addition of boiling water or milk. Convenience rice products include white or polished, precooked, and instant. Precooked rice and pastas are not popular in foodservice because they lose quality if kept warm for long periods.

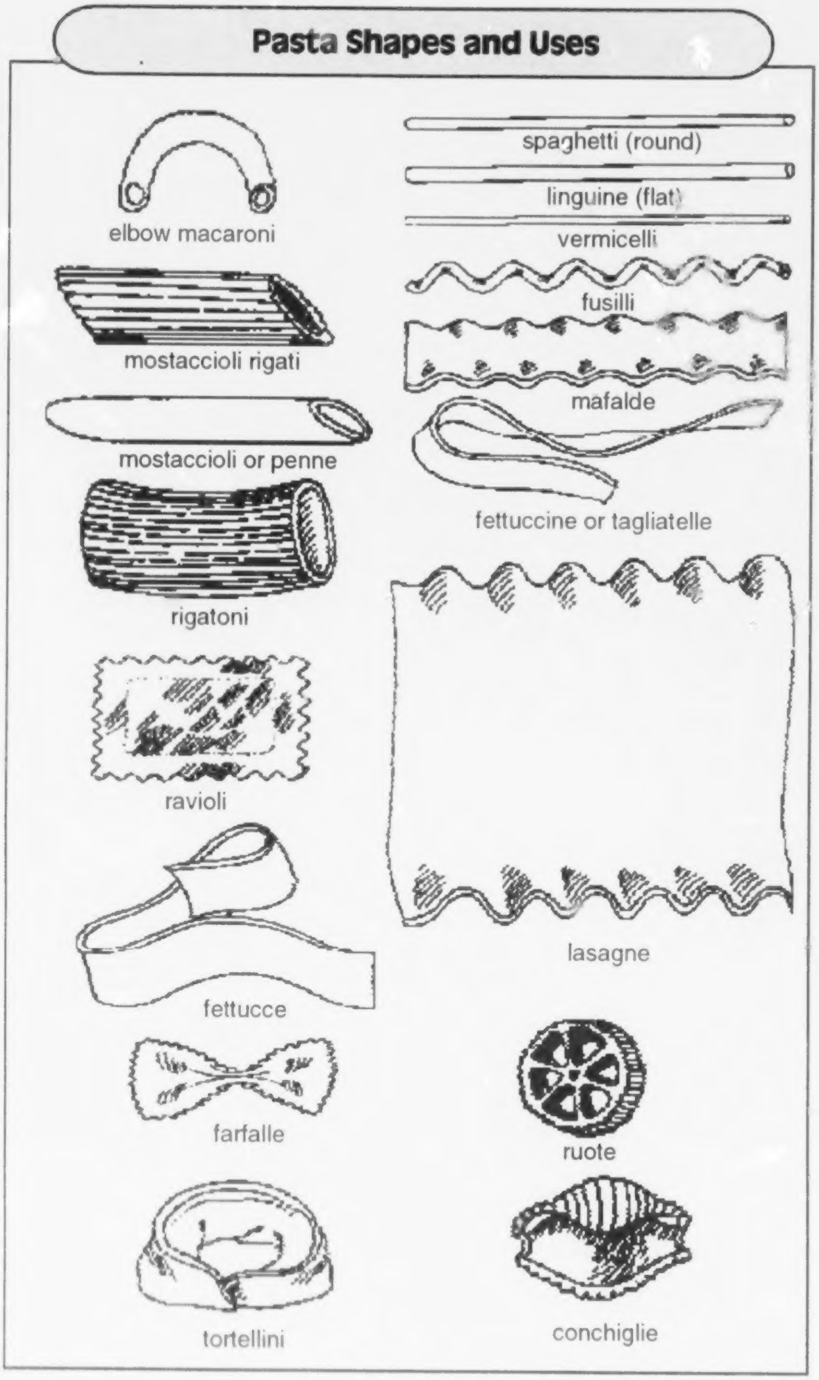

Pasta Shapes and Uses
elbow macaroni
spaghetti (round)
linguine (flat)
vermicelli
fusilli
mostaccioli rigati
mafalde
mostaccioli or penne
fettuccine or tagliatelle
rigatoni
ravioli
lasagne
fettucce
farfalle
ruote
tortellini
conchiglie

*Figure 29.1*

**◆ Essential Questions: ◆**
**Selection of Cereals and Pastas**

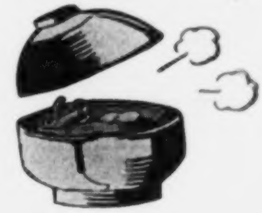
1. What are the three parts of a kernel of grain?
2. What types of rice are available and how do they differ?
3. Are cereal products usually purchased by weight or size? Why?

## COOKING CEREALS AND PASTAS

The cooking of cereals and pastas is similar. The principles of starch cookery apply to both. Starch is composed of microscopic granules that absorb liquid and swell when cooked. To prevent lumping of cereal granules, they must be added slowly to rapidly boiling water while stirring or mixed with a small amount of cold water before they are stirred into boiling water. Whole cereal grains, such as rice, and pastas, such as macaroni, spaghetti, and noodles, are larger pieces than cereal granules. They are added directly to boiling water and stirred briefly to separate.

As the product cooks, three things happen: (1) the starch absorbs water; (2) the heat of cooking causes steam to form which erupts the starch granules; and (3) the released soluble starch paste causes the product to gelatinize. The term gelatinize refers to the thickening or soft gel which forms when starches are cooked. This is what makes cooked cereals thicken. It is what makes rice or macaroni products become tender and easy to chew without breaking apart.

Cereals and pastas are boiled or steamed. When cooking in quantity, cereals and pastas usually are cooked in a steam-jacketed kettle or steamer. They also may be prepared in a heavy kettle on top of the range.



The amount of water needed for cooking varies with different cereal and pasta products. The amount of water required is usually two to two-and-one-half times that of the cereal product. Pretreated cereals may take less water, so it is best to follow the manufacturer's directions. About seven times as much water as pasta is necessary to give the pasta room to expand and cook without sticking to the pot. As a rule, granular cereals absorb more water than whole or flaked cereals. The amount of water used should be the amount for which the recipe calls. When too much water is used, dissolved nutrients are discarded with the excess water. The practice of rinsing whole grain cereals and pastas, such as rice and spaghetti, may prevent sticking of the cooked product, but it also rinses away some of the water-soluble nutrients.

The amount of time required to cook cereals and pastas also varies. Fine-grained cereals like farina and cornmeal cook faster than coarser ones like oatmeal. Small or thin pieces of pasta cook faster than large thick ones. Some cereals are pre-treated to cook faster; be sure to check the manufacturer's directions. Smaller pieces cook faster because more of their surface is exposed to the heat and liquid. Cereals with little bran or cellulose cook faster than ones with large amounts. Whole-grain products require longer cooking time to soften the cellulose or fiber. Do not overcook cereals and pastas. Cereals and pastas become mushy, gummy, or thin if cooked too long. Cereals should be cooked until soft. For softer cereal, cook a few minutes longer. Pastas should be cooked until tender but firm, ***al dente*** (to the tooth).

Excessive stirring during cooking causes the product to become sticky. Stirring breaks the grains or pieces of product. This increases the amount of starch in the cooking water.

For flavor, salt is added to the boiling water used to cook cereals and pastas. A little oil may be added to rice or pasta before cooking to keep it from sticking together as it cooks. Oil helps prevent rice from boiling over or foaming.

Another way to cook rice is to sauté it in a small amount of butter, margarine, or oil before stirring it into a boiling liquid to finish cooking. Sautéing keeps the rice from sticking together. It also adds flavor. Sometimes the rice is sautéed with onions, mushrooms, garlic, green pepper, or other foods for additional flavor. For example, the rice for Spanish rice is browned before the sauce is added.

### Serving Cereals and Pastas

Foodservice establishments usually serve cold cereals in prepackaged individual servings. The box of cereal often is served with a pitcher or carton of milk or cream and sugar. Sometimes the cereal is placed in a bowl, milk or cream is added, and the cereal is topped with fresh fruit such as banana slices or strawberries. When cold cereal is prepared in this manner, it should be served immediately.

Hot breakfast cereals should be prepared as close to serving time as possible and kept covered until served. This prevents the cereal from drying. Hot cereals are served with butter or cream and sugar.

Pasta dishes should be served hot. Spaghetti usually is placed on the serving dish, topped with sauce, then garnished. Other types of pasta usually are mixed with other foods as the dish is prepared. Appropriate garnishes for pasta dishes include Parmesan cheese, parsley, slices of sausage, grated or sliced cheese, or buttered crumbs.

**◆ Essential Questions: ◆**
**Cooking Cereals and Pastas**

1. What are the four main shapes of pasta?
2. What are the principles of starch cookery?
3. What three things occur as starches cook?

## HOLDING AND STORING CEREALS AND PASTAS

Cereals should be prepared just before serving, so lengthy holding or storage is not necessary. Pastas, to be served alone, as a side dish, or topped with a sauce, should also be cooked shortly before serving.

Foodservice establishments featuring spaghetti may use an automatic spaghetti cooker. The spaghetti is cooked in boiling water, drained in a basket, then rinsed in cold water to remove starch. The cooked spaghetti is portioned into individual servings using a rack of plastic cups. It is then stored in clean cold water in a storage tank until needed. Spaghetti may also be held in bulk in clean cold water or refrigerated. When needed, the spaghetti is reconstituted by lowering it into hot water for about thirty seconds.

Pasta dishes like lasagna should be refrigerated if they are not served immediately. They can be reheated in a microwave oven. Additional liquid may be added for even heating without drying.

### ◆ Essential Questions: ◆
### Holding and Storing Cereals and Pastas

1. How can spaghetti be held if it is not served immediately?
2. When should pasta, like lasagna, be cooked for the meal?

## Chapter Highlights

- Cereals and pastas are made from grains, the edible seeds produced by certain plants of the grass family.
- The three parts of a kernel of grain are the bran, the endosperm, and the germ.
- Processed grains may be either unrefined or refined. In unrefined or whole-grain products, the three parts of the kernel are kept together. Refined grain products contain only the endosperm of the grain.
- Refined grain products may be enriched to restore nutrients lost in processing or fortified to add more nutrients than were removed during processing. Rice may be converted by treating it to retain the nutrients in the endosperm.
- Rice may be brown, polished or white, enriched, converted, coated, or wild. Specialty forms of rice include arborio, basmati, jasmine, wehani, and glutinous.
- The best pastas are made from durum wheat. Pastas come in four main shapes – tubes, rods, ribbon-like strips, and special or fancy shapes.
- Convenience grain products include ready-to-eat, partially precooked, and instant breakfast cereals. Convenience rice products include white or polished, precooked, and instant.
- The principles of starch cookery require cooking the product in boiling water until the starch absorbs water. The heat of cooking causes steam to form, erupting the starch granules. The released starch paste gelatinizes. Fine granules should be mixed with a small amount of cold water first, or stirred slowly into the boiling water.
- Pastas should be cooked until tender but firm, al dente (to the tooth).
- Cereals and pastas usually should be served immediately after preparation. Appropriate accompaniments and garnishes should be provided.

# Chapter 30

## Breads

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

- 7G Use appropriate terminology related to the food production and service industry.
- 9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.
- 9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- baking powder
- baking soda
- batter method
- biscuit method
- bloom
- budding
- cake method
- chemical leaveners
- cool-rise method
- double-action baking powder
- drop batters
- gluten
- kneading
- leavening agent
- leavener
- muffin method
- pour batters
- proofing/fermentation
- proofing cabinet
- quick breads
- roll-in process
- self-rising flour
- single-action baking powder
- sponge-dough method
- straight-dough method
- yeast

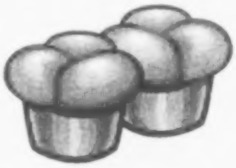
Fresh, hot bread is often the featured menu item that draws people back to a foodservice establishment. The bread may be prepared in the kitchen from scratch or from a mix, or it may be purchased from a bakery. If the products are high in quality and served hot and fresh, the effect is the same–repeat customers.

## TYPES OF BREAD

The basic ingredients in all breads are flour, a liquid, a leavening agent, flavorings, and often fat and eggs. A ***leavening agent*** is a substance that makes a flour mixture rise until it is light in proportion to its size. Breads are classified by the type of leavening agent used as either quick breads or yeast breads. Each has a place on the foodservice menu.

## Quick Breads

Some breads are called quick breads because they take less time to prepare than yeast breads. ***Quick breads*** are faster to prepare because they use quick-acting leavening agents rather than yeast to make them rise and become light. Quick breads are leavened by baking powder, soda, air, or steam. These leaveners act quickly, so the product can be baked at once. Popular quick breads include biscuits, muffins, cornbread, popovers, pancakes, waffles, and loaf breads.



Quick breads are mixtures of flour, liquid, and leavening. They may be classified by the proportion of flour to liquid. The more flour proportion to the liquid, the thicker the mixture will be. Thinner flour mixtures are called batters. Batters can be thin enough to pour or thick and sticky. Very thin batters are called ***pour batters***. They contain about one cup of flour for each cup of liquid. Pancakes, waffles, and popovers are made from pour batters. ***Drop batters*** are too heavy to pour, but too sticky to handle. They contain about two cups of flour for each cup of liquid. Drop batters are used to make muffins, coffee cakes, and some biscuits and quick loaf breads. Thick flour mixtures are called doughs. Soft doughs are stiff enough to handle and roll into shapes. The usual proportion is three cups of flour to each cup of liquid. Biscuits, scones, doughnuts, and some coffee cakes are made from soft doughs.

Quick bread mixes can be made in the foodservice establishment during a slow period for use later. Quick bread mixes are made by sifting together the dry ingredients and then cutting in the shortening. The mix can be stored up to six weeks without refrigeration or longer in the refrigerator. Many foodservice establishments use commercial mixes.

## Yeast Breads

Yeast breads rise much more slowly than quick breads. Yeast breads use yeast as the leavening agent. ***Yeast*** is a one-celled plant that grows by a process called budding. ***Budding*** means that new yeast plants form from cells that branch out from a yeast plant. Yeast feeds on starch and sugar. It grows best at temperatures between 78-85°F. The yeast dies at temperatures over 140°F. In a moist environment with adequate food and at the correct temperature, the yeast grows. It produces carbon dioxide that slowly stretches the dough, causing it to rise. This process takes several hours. However, a new "instant yeast" product that greatly reduces rising time is available.

Yeast breads have a pleasant, distinctive aroma, flavor, and texture. They are made from white, whole wheat, rye, or specialty flours, or a mixture of several flours. Some yeast breads are sweet, such as in coffee cakes, sweet rolls, doughnuts, and Danish pastries. Yeast breads are shaped into loaves, rolls, braids, and rings. Most yeast breads are baked in the oven; however, some varieties of yeast breads are fried in deep fat. Some yeast breads have a hard crust, others have a soft crust. A yeast dough forms the base for pizza crust

## Convenience Bread Products

Both quick breads and yeast breads are available in convenience forms. A variety of mixes are available. Most result in products comparable to those made from scratch.

Canned biscuits, rolls, pastries, and frozen versions are available. These products are ready to be panned.

Commercial bakeries can provide a variety of breads and pastries. Some commercial bakery products are ready to serve, others require reheating or browning. Most food-service establishments purchase some or all of their breads from commercial bakeries.

◆ ***Essential Questions:*** ◆
***Types of Bread***

1. What ingredients distinguish quick breads from yeast breads?
2. What are some examples of quick breads? yeast breads?

## MENU USES OF BREADS

Breads are served as part of a meal, as a snack or appetizer, or used as an ingredient. Bread may be served as the main dish, as an accompaniment, or even as dessert.

Breads are especially popular at breakfast. Toast is probably the most popular use of bread at breakfast. Pancakes and waffles are often served as the main dish. Muffins, biscuits, and plain doughnuts go well with other breakfast foods.
Sweet rolls, English muffins, croissants, and coffee cake are other breakfast favorites.

At lunch or dinner, bread is served many ways. It frequently becomes part of a sandwich. Biscuits, muffins, and cornbread are good accompaniments to many specialties like soups and stews. Tortillas and crepes (thin pancakes rolled with filling) are other bread products served at lunch and dinner. Freshly baked rolls, bread, or specialty breads, such as Focaccia or Brioche, add to the enjoyment of most main dishes. Garlic bread is especially popular with pasta dishes. For main dishes, chicken a la king or Welsh rabbit is served over toast points. Creamed vegetables or meat may be served in a popover. Dumpling are often added to stews. Bread cubes are a common ingredient in stuffings. Yeast dough forms the base for the ever popular pizza and breads made from sweet doughs like gingerbreads and coffee cakes are served for dessert. Shortcakes and fruit cobblers are desserts featuring bread.

◆ ***Essential Questions:*** ◆
***Menu Uses of Breads***

1. What kinds of breads are served for breakfast?
2. How is bread used in menus for lunch and dinner?

## INGREDIENTS FOR MAKING BREADS

Flour, liquid, leavening, and salt are the basic ingredients in all breads. Sugar or syrup, fat, eggs, and flavorings are included in many breads.

### *Flour*

Flour is made from finely ground grain. The flour must contain enough protein to form the structure or body of the bread. When liquid is mixed with flour, a substance called gluten is formed from the protein in the flour. ***Gluten*** is the elastic framework that stretches and holds the gas bubbles formed by the leavening as the batter or dough rises. Because gluten is a protein, it hardens when the product is baked. The gluten supports the flour mixture so the bread will not fall apart when baking is completed.

White wheat flour is the best flour for making breads. White flour is milled after the bran and germ have been removed from the wheat. It may be bleached or unbleached. White flour is usually enriched with thiamin, riboflavin, niacin, and iron – the nutrients lost in milling.

Wheat flour is made from hard wheat or soft wheat. Bread flour is made from hard wheat. It contains more gluten or protein than other flour. It is used by bakers who make large quantities of bread. All-purpose flour is milled from a blend of both hard and soft wheats. It contains enough protein to provide the gluten essential to make the breads and rolls made in most foodservice establishments.

Whole wheat, graham, rye, and other specialty flours add flavor and variety to breads. Meals like cornmeal and oatmeal are used to add texture and flavor to some breads. "Meals" differ from flour because they are not as finely ground. These meals and specialty flours do not have enough gluten to develop a desirable bread structure. They should be combined with white wheat flour to ensure a light product.

***Self-rising flour*** has baking powder and salt added. Self-rising flour saves time when making bread.

## Liquid

The liquid used in making bread is usually water or milk. Liquids provide moisture to develop the gluten. Sour milk, buttermilk, potato water, or fruit juices add a special flavor.

Water makes the texture of the bread coarse and chewy. The crust will be crisp. Water is used for French and Italian bread and hard rolls.

Milk adds flavor and nutrients to bread. It improves the color and texture of the bread. Using milk results in bread with a fine velvety grain. It also helps the product stay fresh longer. Fresh, evaporated, or dried milk may be used.

## Leaveners

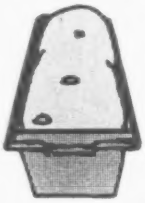
A ***leavener*** is a substance that makes a baked product rise so it is light in proportion to its size. Leaveners include chemicals, yeast, air, and steam.

Only a small amount of leavener is needed. Too much causes a coarse product that dries out easily. Too little results in a product with a fine grain, small volume, and a rough crust. Leaveners must be measured carefully.

**Chemical Leaveners.** ***Chemical leaveners*** are chemicals that react with moisture and heat to form the gas, carbon dioxide. Chemical leaveners are used in quick breads because they react quickly. The two major quick-acting chemical leaveners are baking powder and baking soda.

***Baking powder*** is a mixture of baking soda, an acid salt like cream of tartar, and a starch like cornstarch. When liquid is added, the acid salt dissolves and reacts with the soda forming carbon dioxide. When heat is added, the reaction speeds up, the gas expands, and the product rises. Baking powder is the most common leavening agent for quick breads.

Baking powder may be single-action (fast-acting) or double-action (slow-acting). ***Single-action baking powder*** releases its carbon dioxide as soon as moisture is added. The action speeds up when heat is applied. Because it acts so quickly, the product must be mixed, prepared for baking, and placed in the oven quickly. For this reason, single-action baking powder is seldom used in commercial baking. ***Double-action baking powder*** requires both moisture and heat to completely release all of its carbon dioxide. It acts much more slowly than single-action baking powder. This makes it more desirable for commercial baking. To prevent undesirable flavors in the finished bread product, only the specified amount of baking powder should be used.



***Baking soda*** is another substance that reacts with acid to produce carbon dioxide. Baking soda plus an acid, such as sour milk or buttermilk, honey, molasses, fruits, cocoa, or chocolate, is used to leaven some quick breads. Cream of tartar also may be used as the acid. The heat of the oven causes the gas to expand and the product to rise.

**Yeast.** Yeast is a leavening agent and also contributes to flavor. Two types of yeast are used in baking – fresh yeast and dry yeast. Fresh yeast is purchased in compressed cakes. It is purchased in one to five pound blocks. Compressed yeast may be kept four to five weeks under refrigeration. Dried yeast is purchased in granular form. It is sealed in envelopes, cans, or jars to ensure freshness. Dried yeast gives the best results when used by the date stamped on the envelope. It does not require refrigeration.

The two types of yeast are used differently. Most bread recipes require compressed yeast. Compressed yeast is crumbled into a small amount of lukewarm water before using. Dry yeast is sifted with the dry ingredients then mixed with other ingredients. It may also be dissolved in lukewarm water. When converting compressed yeast to active dry yeast, only 40 percent of the weight of the compressed yeast is used (1 lb. compressed yeast = 6.5 oz. dry yeast or 500 g. of compressed yeast = 200 g. dry yeast).

Yeast works best at room temperatures of 70-90°F. It is destroyed by high temperatures. Low temperature slows down yeast activity. The liquid in a recipe requiring yeast must be lukewarm. Yeast dough must be placed in a warm place to rise. This process is called ***fermentation*** or ***proofing***.

**Air.** Air expands when heated. This helps a flour product rise. Air can be added to a product by beating it, folding in beaten egg whites, sifting the flour, or creaming the shortening.

**Steam.** The liquid in a baked product forms steam as it cooks. Steam causes a flour mixture to rise. Popovers are a bread product leavened by steam alone. A high baking temperature produces steam and leavens the product rapidly.

## Salt

Salt improves the flavor of most bread products. It also strengthens the gluten. Salt is essential for satisfactory yeast products. It prevents the yeast from growing too rapidly. It improves the texture, color, and keeping quality of the bread. Too much salt results in a firm, compact product.

## Sugar

Many baked products contain sugar or syrup. Sugar speeds the action of yeast. However, too much sugar may slow the action of the yeast. Sugar adds flavor and makes quick breads tender. It makes the tops of muffins and other breads browner and crisper. It helps baked products stay fresh longer.

The sugar used in baking is available in several forms – granulated, brown, powdered, or syrup. Syrups are thick, sweet liquids. Syrups include molasses, malt syrup, honey, corn syrup, and maple syrup.

### Fat

The types of fat used in baking include shortening, lard, margarine, butter, and oil. Fat contributes flavor, tenderness, and richness to breads. It helps the product brown and adds to its keeping quality. Fat in large amounts slows the action of yeast.

### Eggs

Eggs add color, flavor, and nutritional value to breads. They bind the ingredients together. They aid in leavening. Fresh, liquid, frozen, or dried eggs are used in breads.

### Flavorings

Extracts, spices, and herbs may be used to add flavor to breads. Flavorings add flavor, aroma, and color to breads.

**◆ Essential Questions: ◆**
**Ingredients for Making Bread**

1. Why is salt an essential ingredient in yeast breads?
2. What is the difference between baking powder and baking soda?

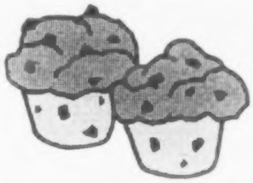
## PREPARING BREADS

The methods for mixing ingredients are different for quick breads and yeast breads. The methods for preparing these breads for baking also differ.

### Quick Breads

Quick breads require little mixing or handling. Overmixing or too much handling causes too much gluten to develop. As a result the bread will be tough. Careful mixing and handling result in a quick bread with a light, porous texture.

Two methods are used to mix most quick breads – the muffin method and the biscuit method. A third method, the cake method, is used for some quick breads. Following the correct method results in a quality product. Desirable qualities for several popular quick breads are listed in Table 30.1.



**Muffin Method.** In the ***muffin method***, dry ingredients (flour, leavening, salt, and sugar) and liquid ingredients (beaten eggs, milk, and melted or liquid fat) are mixed separately, then combined. The mixture is stirred just enough to moisten the dry ingredients. The batter should appear lumpy. Overmixing results in flat-topped muffins with a coarse grain and tunnels. The product will be less tender and may not brown properly.

Additional mixing should be avoided as the batter is dipped into the pans. Muffins are baked in greased muffin tins for about twenty-five minutes at 400°F. The muffin method is used for making muffins, popovers, waffles, pancakes, most cornbreads, and some loaf breads.

**Biscuit Method.** In the ***biscuit method***, the dry ingredients (flour, salt, and leavening) are combined first. A pastry blender is used to cut the fat into the flour mixture. The mixture should resemble coarse cornmeal. The liquid is added last. The dough is stirred until all of the flour is moistened. Overmixing results in a tough product.

The dough is formed into a ball and placed on a lightly floured board. It is then kneaded fifteen to twenty strokes (about 30 seconds) by folding the dough and pressing it with the heels of the hands. The dough is rotated a quarter turn, folded, and kneaded again. ***Kneading*** distributes the ingredients

## Characteristics of Quality Quick Breads

| Product | Characteristics |
|---|---|
| Muffins | Uniform shape<br>Slightly rounded, pebbly tops<br>Golden brown color<br>Tender texture<br>Even grain<br>No big holes or tunnels<br>Good flavor |
| Waffles/Pancakes | Uniform shape<br>Evenly browned crust<br>Tender texture<br>Moist crumb<br>Good flavor |
| Popovers | Well-popped<br>Golden brown crust<br>Hollow inside<br>Walls crusty, tender, crisp<br>Good flavor |
| Biscuits | Uniform size and shape<br>Flat, level tops<br>Crisp, evenly browned crust<br>Tender and moist<br>Flaky, tender texture<br>Good flavor |

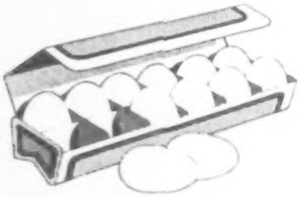
*Table 30.1*

more evenly and develops flakiness. Over kneading develops too much gluten and results in tough, compact biscuits. If the kneading step is omitted, the product will be tender, but crustier and with less volume.

Next, the dough is rolled to about 1/2 inch thick and cut with a floured biscuit cutter or knife. Biscuit dough may be rolled thinner and filled with cinnamon and sugar, fruit, or cheese.

Biscuits are baked on an ungreased baking sheet. For soft-sided biscuits, the sides of the dough should touch. For crusty biscuits, the biscuits should be spaced apart. Biscuits should be baked for twelve to fifteen minutes in an oven preheated to 450°F.

**Cake Method.** In the ***cake method***, the shortening is creamed with the sugar and eggs. Then the sifted dry ingredients are added alternately with the liquids. Flavorings, nuts, and fruits are folded in last. This method is used for most fruit and nut loaves, as well as for coffee cake. It gives a finer texture and grain than the muffin method.



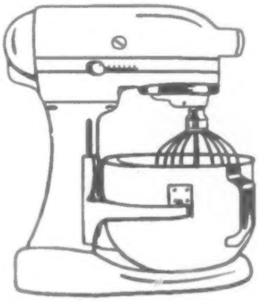
## Yeast Breads

Making yeast breads involves ten basic steps. Each step is described in Table 30.2. Causes of yeast bread failures are shown in Table 30.3.

**Mixing Methods.** Yeast breads can be made by several different methods – the straight-dough method, the sponge-dough method, or the batter method. In the ***straight-dough method***, all ingredients are combined and the dough is kneaded and set aside to rise. In the ***sponge-dough method***, the yeast is combined with part of the liquid, flour, and sugar to make a batter. This batter is covered and allowed to rise in a warm place until light and bubbly. The remaining ingredients are added to make a stiff dough. In the ***batter method***, the dough is mixed and shaped, but not kneaded. After shaping, it is allowed to rise only a short time. The finished product has a coarse, porous texture and tends to dry out quickly.

The most popular method used in foodservice establishments is the straight-dough method. This method is fast and produces an acceptable product. It requires less handling than the sponge-dough method and produces a better quality product than the batter method.

To prepare yeast dough using the straight-dough method, the sugar, fat, and nonfat dry milk (if used) are placed in the mixer bowl. Dry yeast may also be mixed with the dry ingredients. Very warm water (if using dry milk) or hot scalded milk are added and the ingredients are mixed with an electric mixer on low speed to blend. The liquid mixture should be cooled to lukewarm. The compressed or dry yeast should be softened in lukewarm water. The softened yeast and eggs are then added to the milk mixture. Enough flour is added to make a moderately soft dough. The mixture is mixed on low speed until it is smooth and has a satin texture.



The dough is then turned in a lightly greased bowl, turning to grease the top. Then the dough is covered and allowed to rise or proof in a warm place until it doubles in bulk. Sometimes the dough is placed in the refrigerator overnight. This is called the ***cool-rise method***. After rising, the dough is punched down and divided for easy handling. Then the dough is kneaded gently to distribute gas bubbles more evenly. The dough is shaped into loaves or rolls and placed in a pan. The dough is then allowed to rise again until it doubles in bulk. The risen, shaped dough is baked in a hot oven (about 400°F).

**Shaping.** Yeast dough can be shaped in many different ways. It can be weighed or scaled into loaves of equal size. With a rolling pin, it can be rolled thick for sweet rolls or thin for pizza. It can be rolled into a thick cord and braided or tied into knots.

To shape into a plain loaf, the dough is scaled or divided into pieces that will fill about half a bread pan. The dough is rolled into a flat rectangular piece and folded into thirds twice. The edges are sealed by pressing with the fingers. The loaf is then patted until it will fit the pan exactly.

## Making Yeast Breads

| Step | Procedure |
|---|---|
| 1. Measuring | Weigh ingredients on a baker's scale. |
| 2. Mixing | Use the straight-dough method, sponge-dough method, or batter method to combine the ingredients and develop the strength of the gluten. |
| 3. Kneading | Fold, press, and squeeze the dough to develop the strength of the gluten. |
| 4. Fermenting | Allow the dough to rise until double in bulk. |
| 5. Punching | Fold the dough from the sides to the middle and press to expel the gas bubbles and remix the ingredients so the yeast can continue to grow. |
| 6. Resting | Allow the dough to relax for 10-15 minutes for easier handling. |
| 7. Makeup | Prepare the dough for baking by scaling, rounding, and shaping. Scale or divide the dough into sections. Round each section into a smooth mound and allow to rest for 10 minutes. Shape the dough into loaves or rolls. |
| 8. Panning | Place the dough in the pans for baking. |
| 9. Proofing | Allow the dough to rise a final time before baking. This may be done in a proofing cabinet. |
| 10. Baking | Cook the dough in the oven to kill the yeast, harden the gluten, and brown the sides and top. |
| **Standards for yeast breads will vary by the type and form of the bread. A good loaf of yeast bread will have these characteristics:** | |
| *Appearance* | Smooth, golden brown color with a well-rounded top without cracks. The sides should be straight and a little lighter in color than the top. |
| *Crust* | Thin, but tender or crunchy, depending on the kind of bread. |
| | |
| | |

Source: *Professional Cooking*, W. Gisslen, Copyright © 1999 bY John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

*Table 30.2*

## Causes of Yeast Bread Failures

| Fault | Causes |
|---|---|
| **Shape** | |
| Poor volume | • too much salt<br>• too little yeast<br>• weak flour<br>• under or overmixing<br>• improper fermentaiton or proofing<br>• oven too hot |
| Too much volume | • too little salt<br>• too much yeast<br>• too much dough scaled<br>• overproofed |
| Poor shape | • too much liquid<br>• Improper molding or makeup<br>• Improper proofing<br>• too much steam in oven |
| Split or burst crust | • overmixing<br>• underfermented<br>• improper molding — seam not on bottom<br>• oven too hot<br>• not enough steam in oven |
| **Texture and crumb** | |
| Too dense or close grained | • too little yeast<br>• underproofed<br>• too much salt<br>• too little liquid |
| Too coarse or open | • too much yeast<br>• too much liquid<br>• incorrect mixing time<br>• improper fermentation<br>• overproofed<br>• pan too large |
| Streaked crumb | • improper mixing procedure<br>• poor molding or makeup techniques<br>• too much flour used for dusting |
| Poor texture or crumbly | • fermentation time too long or too short<br>• overproofed<br>• baking temperature too low<br>• flour to weak<br>• too little salt |
| Grey crumb | • fermentation time or temperature too high |
| **Crust** | |
| Too dark | • too much sugar or milk<br>• underfermented ("young dough")<br>• oven temperatue too high<br>• baking time too long<br>• insufficient steam at beginning of baking |
| Too pale | • too little sugar or milk<br>• overfermented ("old dough")<br>• overproofed<br>• oven temperature too low<br>• baking time too short<br>• too much steam in oven |

Source: *Professional Cooking*, W. Gisslen, Copyright © 1999 bY John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

*Table 30.3*

For a braided loaf, equal chunks of dough are weighed or cut. The chunks are sprinkled with flour and then each chunk is rolled into a long thin roll. Three rolls are placed side by side. The strips are crossed, alternating the outside strips until the braid is finished. The ends are pressed together to seal.

To form plain rolls, a long thick rounded strip is formed. The strip should be cut into equal chunks weighing 1 1/2 oz. each and each chunk should be rounded.

To make cloverleaf rolls, a long roll of dough one-third the diameter of the strip for plain rolls is formed. The strip should be cut into equal chunks; the chunks should be rounded. Three balls of dough are placed into each greased cup of a muffin pan.

Knots are made by rolling 1 1/2 oz. chunks of dough into 9-inch long strips. Strips may be tied into single or double knots.

Butterflake fans are formed by rolling a 12-oz. piece of dough very thinly into a square or rectangle. They should be brushed with melted butter, then sliced into strips about 1 1/2 inches wide. Stacks of five or six strips should be made. From the stacks, rolls should be cut out about 1 1/2 inches wide. One roll should be placed cut side up in greased muffin pans.

For crescent rolls, the dough is weighed into 12 oz. portions. Each portion is rolled into an 8 inch circle, 1/8 inch thick. The dough is cut into twelve triangles and brushed with melted butter or fat. Beginning at the wide base, each triangle is rolled up. The rolled triangle is then curved to form a crescent shape. The crescents should be placed on a greased baking sheet 1 1/2 inches apart. Figure 30.1 shows various shapes for rolls.

**Proofing.** When large quantities of yeast bread are made on a regular basis, proofing is done in a ***proofing cabinet***. The proofing cabinet maintains a temperature of about 100°F and a humidity of 80 to 85 percent. The warmth and high humidity provide ideal conditions for the rising dough, and it also reduces the time required for proofing. The product should be proofed until double in bulk. Poor volume results with underproofing and coarse texture results in overproofing.

**Baking.** Pans of proofed bread must be handled carefully to prevent the dough from collapsing as it is placed in the preheated oven. Conventional and deck ovens should be preheated slightly above the desired temperature.

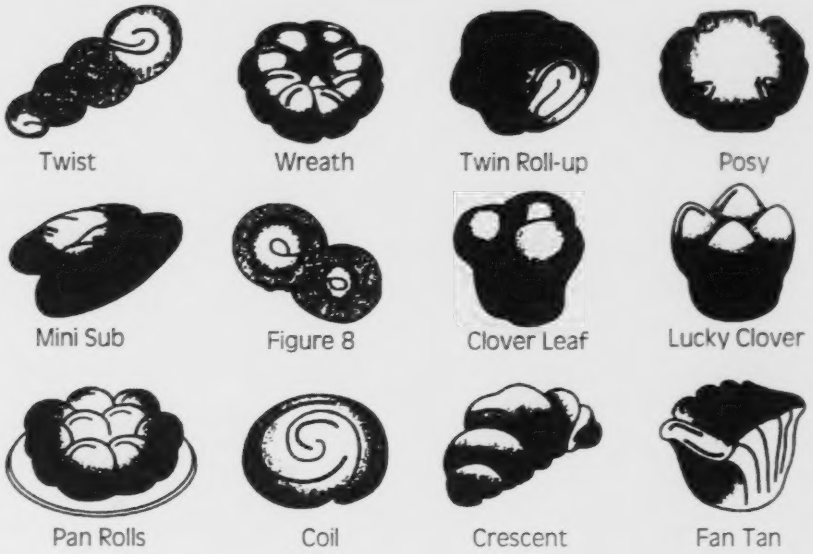
The carousel oven should be preheated to the exact temperature required. Convection ovens should be preheated about 25 to 50°F lower than conventional ovens. Loaves and rolls should be baked at 375°F. For loaves, baking may be started at 425°F, then the temperature should be lowered to 375°F.

The heat of the oven speeds the growth of the yeast for the first fifteen minutes; this is referred to as oven spring. Then the gluten and starch begin to coagulate, making the product firm. The sugar in the dough causes the crust to brown and become glossy or ***bloom***. Dough weighing 1 1/2 pounds bakes in about thirty-five minutes at 375°F, yielding a 1-pound loaf.

Rolls bake in fifteen to twenty minutes, depending on their size. Sweet rolls are baked at a slightly lower temperature.

Rolls and hard-crusted breads may be removed from the oven when baked, but not browned. The browning is completed just

Various Shapes for Rolls



Source: Courtesy of Fleischmann's Yeast.

***Figure 30.1***

before serving. Bread should be removed from pans and cooled on racks immediately.

## Sweet Yeast Breads

Sweet yeast breads include sweet rolls, doughnuts, and Danish pastries. They are made from a very rich dough. The dough has a higher proportion of sugar, shortening, and eggs to flour. Danish pastries contain twice as much shortening as other sweet yeast breads. Sweet yeast breads are sweeter, more tender, and less chewy than other yeast breads.

The standards for sweet rolls vary with the kind being made. Some rolls are very sweet and sticky, others are flaky. But all of them should be golden brown, tender, and flavorful, with a delightful yeasty taste.

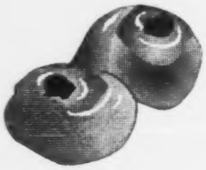
Sweet doughs are mixed by a different method than other yeast doughs. The shortening, sugar, salt, and flavorings are creamed or mixed together until fluffy. Liquid milk or dry milk solids are added and the mixture is creamed again. Eggs are added one at a time and beaten on medium speed. Yeast may be softened and added to the milk mixture or dry yeast may be mixed with the last addition of flour. The flour is added gradually and mixed thoroughly on low speed after each addition. The dough is then kneaded for several minutes at medium speed. (Note: Danish pastries are not kneaded.) A temperature of 78-82°F must be maintained while mixing the dough because of the low gluten content.

Too much mixing causes the temperature to rise. Over mixing causes the dough to become sticky and difficult to handle. Proper mixing results in a smooth elastic dough.

Sweet doughs are allowed to rise less than other yeast doughs. Less fermentation is required due to high sugar content.

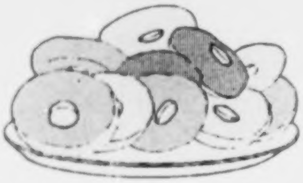
Many sweet rolls can be made from the same basic recipe. Their shapes may be varied. Fillings and toppings can be added for additional variety. Cinnamon and sugar is a popular filling. Other fillings contain nuts, raisins, or dates. Commercial fillings may be used to save time.

**Cinnamon Rolls.** To shape cinnamon rolls, a square or rectangle of dough (10 oz.) is rolled. The rectangle of dough is sprinkled with cinnamon and sugar and rolled into a log shape. The dough is then brushed or washed with a mixture of egg and water. The rolled dough is cut into slices about 1/2 inch thick. The cut slices are placed in a greased pan and brushed with melted butter. The rolls are then allowed to rise, baked, cooled and then iced.



**Coffee Ring.** The sweet dough is filled and rolled as for cinnamon rolls. The log is then formed into a ring connecting the ends. Slashes are cut 1/4 inch deep into the dough about 1 inch apart. This allows the coffee ring to fan out when baked.

**Doughnuts.** The sweet dough is rolled about 1/2 inch thick. The dough should be cut into pieces weighing about 1 1/2 oz. After proofing for 10-20 minutes, the doughnuts are cut from the dough using a doughnut cutter. The doughnuts are then fried in deep fat at 360°F for 2 - 2 1/2 minutes. After frying, the doughnuts are dipped in fine granulated sugar, a cinnamon sugar mixture, or glazed with a sugar syrup.



**Danish Pastries.** The ***roll-in process*** makes Danish pastries unique. The dough should be rolled into a rectangle about 1/2 inch thick. Two-thirds of the dough should be spread with a special roll-in shortening. The unspread portion should be folded over the center section. The remaining section should be folded over the two folded sections. The dough should be refrigerated for 20-30 minutes to slow or retard the growth of the yeast. The roll-in process followed by slowing the growth of yeast may be repeated several times at intervals. The result is a very flaky yeast pastry.

After the final roll-in, the dough is cut into 10-ounce pieces. Each section is rolled about 8 inches long and 1/8 inch thick. The dough is then washed with water or an egg white and water mixture. The dough is spread with a filling or almond or fruit paste, rolled up and cut into 1-inch rolls, and placed in a pan lined with silicone paper. As a final step, the dough is brushed with an egg wash and proofed.

Sweet rolls, coffee cakes, and Danish pastries should be baked at 375°F for twenty to thirty minutes or until golden brown. They should be glazed immediately with a sugar and water syrup. The glaze improves the appearance of sweet yeast breads and helps them stay fresh longer. Sweet yeast breads are sometimes iced with a mixture of powdered sugar, shortening, salt, and hot water, if desired.

◆ **Essential Questions:** ◆

**Preparing Breads**

1. How does the biscuit method differ from the muffin method?
2. How do each of the following ingredients affect the preparation and the characteristics of yeast breads?
3. What are two different shapes that can be formed with yeast dough? Describe the procedures.

## SERVING BREADS

Breads are best served hot from the oven. When placed on the table, breads and rolls should be hot and covered with a napkin to retain the warmth.

Breads, if served as accompaniment to a main meal, are often served in a bread basket lined with linen. Muffins and other breakfast sweet breads can be brought to the table warmed or may be placed in a serving line that maintains proper temperatures.

When breads are used to make sandwiches, burgers, burritos or other main courses, they should not be prepared too far in advance so as to prevent the bread from becoming soggy.

◆ **Essential Questions:** ◆

**Serving Breads**

1. Why are breads usually covered with a napkin when served?
2. How is the best way to serve bread?

## HOLDING AND STORING BREADS

Homemade breads become stale quickly. As soon as the bread is cool, wrap it or place it in an air-tight moisture-proof container. This prevents drying and loss of freshness. In warm weather, bread may be stored in the refrigerator to retard the growth of mold and the spoilage of the bread. However, storing bread in the refrigerator causes products to become stale.

When breads are not served immediately, they may be frozen in a moisture-proof wrapper for future use. Frozen breads keep for several months. To thaw, let the bread stand unopened at room temperature for about 30 minutes. To serve warm, remove the bread from the container or wrapper and heat in a moderate oven for twenty minutes, or heat briefly in a microwave.

Stale bread can be used in several ways, if desired. French toast, grilled sandwiches, stuffings, or bread puddings can be made from stale bread.

◆ **Essential Questions:** ◆

**Holding and Storing Breads**

1. What procedures should be followed when holding breads to be served later?
2. What procedures should be followed when freezing breads to be served later?

## Chapter Highlights

- The basic ingredients in all breads are flour, a liquid, a leavening agent, flavorings, and often fat and eggs.
- Breads are classified by the type of leavening agent used as either quick breads or yeast breads. Baking powder and baking soda are chemical leaveners used in quick breads.
- Popular quick breads include biscuits, muffins, cornbread, pancakes, and waffles. Depending on the proportion of flour to liquid, quick breads may be formed from pour batters, drop batters, or soft doughs.
- Gluten is an important substance in flour that forms the elastic framework of bread as the batter or dough rises. Some types of flour contain more gluten than others.
- Leaveners make a bread product rise. Leaveners include chemicals, yeast, air, and steam.
- Salt is an essential ingredient for satisfactory yeast products.
- Breads have many menu uses. They may be served as part of a meal, as a snack or appetizer, or used as an ingredient. Bread may be served as a main dish, as an accompaniment, or even as a dessert.
- The muffin and biscuit methods are used for mixing ingredients for most quick breads. Quick breads require little mixing or handling. Overmixing or too much handling causes too much gluten to develop;
- Yeast breads are made by the straight-dough, sponge, and batter methods. Yeast doughs and batters are allowed to rise before they are baked. Straight-dough and sponge-dough breads are kneaded at one or more points during preparation.
- Sweet dough is allowed to rise less than other yeast doughs. Less fermentation is required because of the high sugar content.
- To hold and store bread, wrap it or place it in an air-tight, moisture-proof container. Breads frozen in a moisture-proof wrapping keep for several months.

# Chapter 31

## Desserts and Cookies

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- a la mode
- bake soufflé
- baked Alaska
- Bavarian cream
- Bettys
- charlotte
- chiffons or sponges
- dumplings
- egg wash
- floating island
- frozen yogurt
- fruit whips
- ices
- mousse
- parfait
- scalded
- simple syrup
- soft custard
- Spanish flan
- trifle

Desserts add a finishing touch to a meal. The sweetness they provide make a meal more satisfying. Memorable desserts are often the key to repeat customers.

## TYPES OF DESSERTS

Desserts may be plain or fancy. The variety is endless. Desserts include familiar ones like cookies, cakes, pastries, and pies. A variety of other desserts are conveniently classified as fruit, gelatin, milk, or frozen.

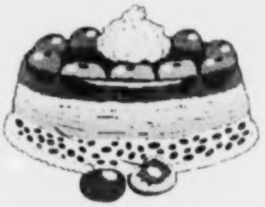
### ***Fruit Desserts***

Fruit desserts are both colorful and flavorful. Fresh, frozen, canned, or dried fruits can be served for desserts.

Fresh fruits make eye-appealing light desserts. Whole, quartered, sectioned, or sliced fresh fruits are often served on a tray with cubes or wedges of cheese for a simple, but satisfying dessert. Melon halves, fruit cups, and fruit ambrosia are other popular light desserts. Fresh fruits can be baked or used to make a sauce. Sliced fresh fruits make attractive toppings for cakes, puddings, custards, and pies.

Canned fruits usually are served chilled. Frozen fruits are thawed and served ice cold. Dried fruits may be served alone or as a dessert ingredient. Several dried fruits cooked in a simple syrup make a fruit compote. Cooked dried fruits are also used in ***fruit whips*** made from cooked fruit pulp mixed with either beaten egg whites or whipped cream.

Fruits are used as ingredients in a variety of other desserts. Some popular desserts that include fruit as an ingredient are soufflés, dessert crepes, fruit fritters, fruit turnovers, shortcakes, dumplings, cobblers, crisps, Bettys, cake rolls, upside-down cakes, fruit pies, pastries, and frozen desserts.

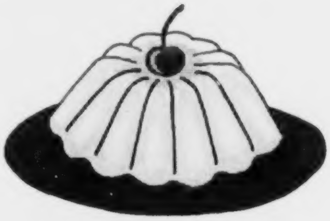


Fruit fritters and fruit turnovers are fried fruit desserts. Fruit fritters are deep-fried pieces of batter-dipped fruit. Fruit turnovers are folded squares of pastry filled with sweetened fruit. Fruit turnovers or fried pies are the most popular type of dessert in fast-food facilities.

Shortcakes, dumplings, cobblers, crisps, and Bettys are baked fruit desserts. Shortcakes are sweetened fresh fruit spread between layers of sweet biscuits, angel food cake, or sponge cake. Additional fruit and whipped cream are used as toppings. Strawberry and peach shortcakes are especially popular. ***Dumplings*** are baked squares of pie or biscuit dough filled with sweetened fruit. The corners of the dough are folded to the center to cover the fruit filling. Cobblers are a fruit filling topped with sweetened biscuit or pie dough and baked. The dough may be cut in fancy shapes. Crisps are baked fruit fillings topped with a mixture of flour, nuts, sugar, and shortening. Apples, peaches, pears, blueberries, and other fruits may be made into crisps. ***Bettys*** are made by layering sweetened fruit and cake or bread crumbs. When baked, the bottom layer of crumbs becomes soft while the top layer is brown and crisp.

## Gelatin Desserts

Gelatin desserts may be simple or elaborate. They range from fruit-flavored gelatin squares to elaborate soufflés. Gelatin desserts include whips, chiffons or sponges, creams, and mousses.



Gelatin whips are gelatins that have been beaten to the consistency of whipped cream and then chilled until set. ***Chiffons*** or ***sponges*** are gelatins to which beaten egg whites are added. Chiffons are usually used as pie fillings but also are served as puddings or chilled desserts.

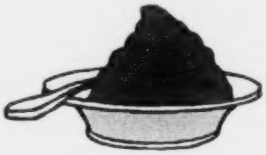
Gelatin creams are smooth, velvety desserts that use a hot pudding or soft custard as the liquid for dissolving the gelatin. Beaten egg whites can be added after the cream is partially set. For ***Bavarian cream***, whipped cream is folded in when the custard based is partially set. A ***charlotte*** is a flavored Bavarian cream that is molded with ladyfingers or sponge cake.

A ***mousse*** is a soft or creamy dessert that is made light and fluffy by the addition of whipped cream, beaten egg whites, or both. Often Bavarian creams and chiffons fit this description, but mousse recipes reduce the amount of gelatin or leave it out so that the mixture is softer. Mousses are served chilled or frozen.

## Milk Desserts

Puddings and custards are the two general groups of milk desserts. Puddings and custards are soft, sweet, thickened desserts. Puddings are thickened with starch. Custards are thickened with eggs. Baked soufflés are extremely delicate milk desserts and are challenging to make.

**Puddings.** Puddings are usually grouped according to the starch ingredient used to thicken them – cornstarch, tapioca, or rice. Bread, farina (coarsely ground wheat), and cornmeal can also be used to thicken puddings. Cornstarch puddings can be made in many flavors such as vanilla, chocolate, butterscotch, and coconut. Most foodservice operations use mixes to make puddings. Canned and frozen puddings are also available.



**Custards.** Custards may be either baked or soft. Both are made from milk, eggs, sugar, and flavorings. A baked custard is baked in the oven until it sets or gels. A ***soft custard*** is simmered over hot water or stirred constantly over low heat. A soft custard is really a dessert sauce. A soft custard should be the consistency of heavy cream. It should be smooth, velvety, sweet, and light yellow in color. Vanilla is the most common custard flavor.

Custards can be used in various ways. Soft custard is served alone or as a sauce for cakes, steamed puddings, fruits, or gelatin. A ***floating island*** features islands of lightly toasted meringue floating on soft custard. ***Trifle*** is made by pouring soft custard over cake spread with jam. A ***Spanish flan*** is made by putting caramel syrup in a baking dish before pouring in the custard mixture. When the baked custard is turned out of the baking dish, the caramel syrup will flow over the custard like a sauce.

**Baked Soufflés.** A ***baked soufflé*** is a light puffy milk dessert. It is leavened by beaten egg whites. It is baked in a fluted ceramic dish the appropriate size for the recipe. Chocolate soufflé is the most popular flavor.

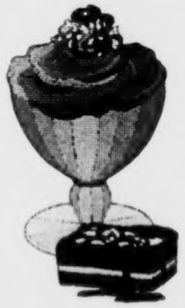
## Frozen Desserts

Frozen desserts include ices, sherbets, ice creams, ice milks, parfaits, and mousses. ***Ices*** are made from sweetened fruit juices. They do not contain milk products. Sorbet (a French term) also refers to fruit ices. Sherbets are made with sweetened fruit juices and milk. They may contain beaten egg whites or gelatin. Ice creams are made from cream, milk, and sugar. French ice creams also contain eggs and are made from a soft custard base. Ice creams may be combined with fruits, nuts, cookie or cake crumbs, syrups, candy bits, and flavorings such as chocolate, vanilla, or peppermint. Foodservices usually purchase ice cream in 2 1/2 or 5 gallon containers. Ice milks are made from the same ingredients as ice creams, but contain less fat. ***Frozen yogurt*** includes yogurt in addition to the ingredients in ice cream or ice milk.

Many popular desserts are made with ice cream or sherbet. When pie or cake is topped with a scoop of ice cream, it is called ***a la mode***. Ice cream topped with a dessert sauce becomes a sundae. The sundae may be garnished with whipped cream, chopped nuts, and a cherry. An ice cream soda contains a mixture of ice cream, carbonated water, and syrup topped with whipped cream and a garnish. A peach melba is made with a scoop of ice cream on a slice of sponge cake, a peach half, and whipped cream covered with slivered almonds and Melba sauce. A ***baked Alaska*** is a brick of ice cream encased in sponge cake and iced with a soft meringue sprinkled with slivered almonds. The dessert is placed in a hot oven until the meringue browns after which it is served immediately. Ice cream pies are made in a baked pie shell or a crust made of graham crackers or cookie crumbs, filled with softened ice cream mixture, and refrozen. Two or three flavors of ice cream may be layered. The ice cream pie may be garnished with whipped cream and fruit or it may be covered with a meringue and browned in the oven like a baked Alaska.

The term ***parfait*** refers to two different frozen or chilled desserts. One is a rich frozen dessert made by pouring a sugar syrup like butterscotch or raspberry syrup over beaten egg yolks or egg whites. Whipped cream and flavoring are then folded into the mixture. The mixture is frozen without stirring. Parfaits made with egg yolks are called golden parfaits. Those made with egg whites are called angel parfaits. The other type of parfait is made by layering different foods in a tall glass. The layers may be ice cream, gelatin, or fruit. These parfaits are usually topped with whipped cream, chopped nuts, and fruit. The second type of parfait is frequently served in fast-food establishments.

A frozen mousse is another very rich dessert made with sweetened whipped cream and flavoring. The mousse may contain gelatin, but also is made without gelatin.



### Convenience Desserts

A variety of convenience products are used for desserts in foodservice. Convenience forms are available for most types of desserts.

Fresh fruits, though not actually convenience products, are among the most convenient desserts to prepare. Processed fruits including canned, dried, and frozen products are also convenient to use.

Mixes are available for puddings, custards, pie fillings, pastry, cakes, and gelatin. Pudding mixes may be of the instant variety or they may require cooking. Canned puddings and pie fillings save even more time and energy. Frozen puddings are also available. Prepared sheets of gelatin may be purchased commercially. Whipped toppings are available as mixes or in pressurized cans.

Many baked desserts are available frozen or ready-to-eat. Most foodservice operations buy commercially frozen ice cream, ice milk, ices, and sherbets.

**◆ Essential Questions: ◆**
**Types of Desserts**

1. What are the types of desserts used in foodservice establishments?
2. What convenience dessert products are available to foodservice establishments?

## PREPARING DESSERTS

The skills needed for preparing desserts range from minimal to extensive. Preparation may be as simple as washing, drying, peeling, or slicing fresh fruits or as elaborate as preparing a baked souffle.

### Preparing Fruit Desserts

Fruit desserts are among the easiest desserts to prepare. Fruits are naturally colorful and tasty and are often served fresh.

**Fresh Fruits.** Fresh fruits require little preparation. Wash and dry fresh fruits to be served whole. Polish apples, pears, and plums with a soft cloth. Treat peeled and sliced bananas, apples, and other fruits that darken with ascorbic acid or lemon juice to prevent discoloration. A simple syrup will also prevent darkening. A ***simple syrup*** is made by boiling sugar and water until clear. The syrup should be cooled before using. Peel and section citrus fruits over a bowl to catch the juice. Be sure to remove all the seeds.

**Canned Fruits.** Select only the finest grade (Grade A) canned fruit to serve as desserts. The number of servings can be determined by the number, or count, of the whole or half pieces stated on the label. A number 10 can of large peach halves might have a 22 count, but a number 10 can of medium peach halves might have a 35 count.

**Dried Fruits.** Dried fruits are graded by size. Select the largest size to serve whole or in a fruit compote. The larger sizes are more expensive. To save money use smaller sizes in purées and sauces.

To cook dried fruits, cover with cold water in a saucepan. Heat and simmer until tender. If more sweetness is desired, add sugar after cooking the fruit.

**Frozen Fruits.** Frozen fruits are sold dry packed or sugar packed. The amount of sugar to fruit varies. Frozen fruits packed for foodservice show the sugar to fruit ratio on the package. The ratio of fruit to sugar ranges from 3:1 to 5:1. The sugar in a recipe should be decreased accordingly.

Do not thaw frozen fruits until an hour before use. Frozen fruits lose quality rapidly after thawing.

**Cooked Fruits.** Baking is the method most frequently used to cook fruits in the foodservice establishment. Apples and pears may be baked whole. Fried pies are popular desserts in fast-foodservice.

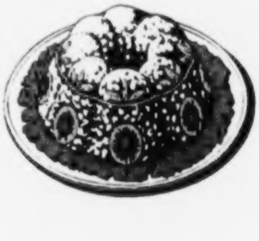
Frozen apple or cherry turnovers are used in fast-food establishments to make fried pies. The frozen tart is fried quickly in deep fat, wrapped, and kept hot under a heat lamp. The hot fried pie should be held no longer than forty-five minutes.

## Preparing Gelatin Desserts

Both flavored and unflavored gelatin are used in desserts. Strawberry, raspberry, cherry, lemon, orange, and lime are all popular flavors. If fruit is to be added, match the flavors of the fruit and the gelatin.

To ensure a firm gel, 1 1/2 lbs. of flavored gelatin and 2 1/2 oz. of plain gelatin per gallon of liquid should be used. Use of too much gelatin will produce a tough, rubbery product. Use of too little gelatin will result in a runny product which will not set.

To prepare gelatin, the flavored gelatin is dissolved in boiling water. The remaining water is added cold or in the form of shaved ice for a quick set. Fruit juice may be substituted for part or all of the water. The gelatin is poured into a shallow pan or mold and refrigerated until set. For unflavored gelatin, the gelatin is soaked in cold water for 5 minutes, then dissolved in hot water or fruit juice. The mixture is cooled, poured into a mold, and refrigerated until set. All fruits can be used with gelatin except



fresh pineapple. Fresh pineapple contains an enzyme that prevents gelatin from gelling.

To make a whipped gelatin, the gelatin is refrigerated until partially set. The bowl of gelatin then is placed inside a large bowl of cracked ice and whipped with a beater until white and frothy. If the gelatin has not set long enough first, the whip will not hold and the dessert will collapse. The whipped gelatin should be poured into a mold and refrigerated until set.

When adding whipped egg whites or whipped cream, the gelatin is refrigerated until partially set. The egg whites are whipped to stiff peaks, then the gelatin is whipped into the whites. The cream is whipped just until stiff and then folded into the gelatin. After adding the whipped egg whites or whipped cream, the mixture should be poured into a mold and refrigerated until the gelatin is set.

Gelatin desserts usually are prepared the night before since they require at least four hours to set firmly. They should be kept covered in the refrigerator to prevent absorption of odors and tastes. Covering also keeps gelatins from drying out.

## Preparing Milk Desserts

Milk is the main ingredient in milk desserts. The ingredients in puddings and custards are similar. All contain milk, sugar, salt, eggs, and flavoring. The main difference is the thickener. Puddings are identified by the thickener used – cornstarch, tapioca, rice, or bread. In puddings, eggs are used for color and flavor, and provide some of the thickening. A custard is thickened entirely by the eggs, so more are needed.

**Puddings.** Puddings are made either on top of the range or baked in the oven. To prepare puddings on top of the range, the thickener, sugar, salt, and milk are mixed together first. The milk for cream puddings should be ***scalded*** by heating to 180°F to prevent scorching. To prevent clumping, a small portion of the hot mixture is added to the beaten egg mixture. Next, this mixture is added to the rest of the hot pudding mixture. The pudding is cooked over medium heat about 3 minutes until thick. Continuous stirring helps to keep the pudding smooth.

After cooking, the pudding is removed from the heat and flavoring added. Extracts like vanilla lose their flavor and aroma during cooking, so they are added after the pudding is cooked. The pudding should be cooled and refrigerated. Covering the pudding with waxed paper or transparent wrap prevents a skin from forming on the top of the pudding as it cools.

The finished pudding product should be creamy and smooth, neither too thick nor too thin, with no lumps. If the resulting pudding product is lumpy, beating it at a high speed with an electric mixer helps to create a smoother product.

To prepare a baked pudding, the thickener, milk, sugar, salt, flavoring, and eggs are combined and poured into a greased baking dish. Next, the baking dish is placed into a large pan and hot water poured around the baking dish. The pudding is baked at 300° until set. This method is called a water bath. The purpose of the water bath is to prevent the pudding or custard mixture from overcooking and curdling.

Puddings and custards should be removed from the heat and cooled immediately to prevent overcooking and curdling. Those containing eggs require careful storing and handling. Staphylococcus bacteria grow very rapidly in milk-egg mixtures at lukewarm temperatures. All puddings and custards should be cooled rapidly in the refrigerator. The surface should be covered to prevent a tough top layer from forming. Stir puddings and custards occasionally while cooling. Puddings and custards should be kept refrigerated until serving time.

**Custards.** Since eggs are used to thicken custards, more eggs are required than for puddings. Generally the proportion of milk to eggs is four cups milk per egg. A true custard uses only eggs for thickening, but some custards use a combination of eggs and starch. These types of custard are more commonly used in foodservice. They are easier to make and cost less.

To make a baked custard, the milk is scalded in a double boiler over low heat. Slightly beaten eggs, sugar, salt, and cornstarch are mixed together and poured slowly into the hot milk while stirring constantly. A small amount of cold water is mixed with the eggs before adding to the hot milk. Next, the mixture is poured into a buttered baking dish or custard cups. Traditionally, the top of the custard is sprinkled with grated nutmeg. The baking dish or custard cups are set into a large pan and hot water poured around the custards (water bath method). The custard is baked at 325°F for about an hour; it is done when a knife inserted in the center of the custard comes out clean. If the baked custard separates during baking, it is overcooked. A quality baked custard is tender, yet firm enough to hold its shape when spooned for serving. The top should be delicately browned.

The procedure for preparing a soft custard is very similar to the procedure used for baked custard except that a soft custard is prepared in a double boiler and stirred constantly. A soft custard is not baked. The egg and milk mixture is cooked in the double boiler until the eggs coagulate and the mixture coats a clean metal spoon (about 185°F). At this point, the custard is removed from the heat and poured into a stainless-steel bowl to cool. Aluminum pans are not satisfactory because they cause the custard to develop a grayish cast. The texture of a soft custard which has been overcooked can be improved by beating it with an electric mixer until smooth and creamy.

The storage and holding procedures used for custards are the same as those used for puddings. These procedures are described in the section on puddings. It is most important to remember that custards should be kept refrigerated until serving time.

## Preparing Frozen Desserts

Most frozen desserts prepared in foodservice are based on commercially made ice cream. Making homemade ice cream is limited to very large producers because of strict health codes and special equipment and labor involved. A high quality ice cream should weigh a minimum of 4.5 lbs. per gallon. Ices and sherbets should weigh at least 6 lbs. per gallon. The quality of frozen desserts is directly related to the quality of the ice cream used to make them.

Ice cream must contain 8 to 10 percent butterfat according to federal regulations. Ice milks must contain 2 to 7 percent butterfat and have at least 11 percent milk solids.

**Portions of Ice Cream Desserts**

| Dessert | Portion | Scoop Size |
|---|---|---|
| A la mode topping for pie or cake | 1 | No. 20 scoop |
| Banana Split | 3 | No. 30 scoop |
| Parfait | 3 | No. 30 scoop |
| Single serving of ice cream | 1 | No. 10, 12, or 16 scoop |
| Sundae | 2 | No. 20 scoop |

Source: *Professional Cooking*, W. Grisslen, Copyright © 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

***Table 31.1***

Ice cream should be slightly soft (8-15°F) in order to scoop easily. If it is too hard, it is difficult to scoop. If it is too soft, it melts too quickly.

The correct size scoop must be used to ensure the desired number of portions per carton. See Table 31.1 for normal portions for frozen desserts. The scoop should be kept in a well of cold, running water between uses. The dipper should be tapped against a pad or paper towel before using it to remove excess water. Water will cause ice crystals to form in the ice cream.

A circular motion should be used to fill the dipper and then the ice cream released into the serving container. The ice cream should be kept level in the container to maintain its texture and to prevent the formation of ice crystals.

**◆ Essential Questions: ◆**
**Preparing Desserts**

1. How is a whipped gelatin dessert made?
2. What is the test for doneness when making a custard or pudding?

## GARNISHING, SERVING, AND STORING DESSERTS

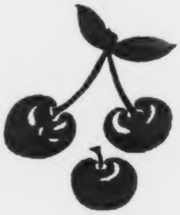
### *Garnishing and Serving Desserts*

Sweet toppings and garnishes are used frequently for desserts. These should be measured for correct portion control. Fresh fruits are naturally colorful and have a variety of shapes. Contrasting colors are often combined. They are often arranged in an attractive display. Fruit compotes are usually served in a tall clear glass dish to show off the fruit. Color may be added to light-colored cooked fruits by glazing with a colored sugar syrup. Fruit desserts may be served with whipped cream, ice cream, fruit sauce, or hard sauce.

Gelatin desserts are colorful and are often molded into attractive shapes. Fruit gelatins often are served with whipped cream or soft custard. Gelatin whips may be garnished with cherry or fresh strawberry. Gelatin soufflés are usually elaborately garnished with chocolate shavings, whipped cream rosettes, or chopped nuts. Gelatin desserts are usually served in stemmed glassware or on clear glass plates.

Molded gelatin desserts must be unmolded before serving. To remove the gelatin from the mold, the mold is dipped briefly into very hot water. The serving dish is placed on top of the mold and both the mold and the serving dish are inverted quickly. The molded dessert will slip easily out of the mold.

Puddings are often served with a fruit topping. Either fresh or canned fruit may be used. Whipped cream also adds eye appeal to puddings. Some puddings are topped with a meringue which is browned lightly before serving. A dessert sauce is often served over baked custards. Caramel or fruit sauce add flavor and color to custards. Soufflés may be topped with whipped cream to make them even more elaborate. Puddings are usually chilled before serving.



Frozen desserts range from simple to elaborate. In fast-food service, ice cream desserts are served on cones, in paper cups, or in plastic dishes. Attractive garnishes of whipped topping, cherries, chopped nuts, crushed pineapple, and dessert sauces are used creatively to give these desserts eye appeal. In other types of foodservice, these desserts may be served in stemmed glassware or clear glass dishes. Most desserts should be served either cold or warm. A few can be served at either temperature.

Fresh and canned fruits served as desserts should be served cold. Stewed dried fruits are served either hot or cold. Frozen fruits should be thawed, but still have some ice crystals. Cooked fruits are served warm as soon as possible after cooking.

### ***Holding and Storing Desserts***

Gelatin desserts are usually prepared the night before since they require at least four hours to set firmly. They should be covered in the refrigerator to prevent absorption of odors and tastes. Covering also keeps gelatins from drying out. Gelatin desserts should be kept refrigerated until serving time.

Puddings and custards should be removed from the heat and cooled immediately to prevent overcooking and curdling. Those containing eggs require careful storing and handling. Staphylococcus bacteria grow very rapidly in milk-egg mixtures at lukewarm temperatures. All puddings and custards should be cooled rapidly in the refrigerator. The surface should be covered to prevent a tough top layer from forming. Stir puddings and custards occasionally while cooling. They should be kept refrigerated until serving time.

All frozen desserts must be kept frozen until serving time. For prolonged storage, ice cream should be hard frozen at temperatures below 0°F. Ice cream needed for immediate service should be kept a little warmer, about 8-15°F. Frozen desserts should be kept tightly covered to prevent drying out. Ice cream that has been softened and refrozen shrinks and becomes denser. It will yield fewer servings.

**◆ *Essential Questions:* ◆**
***Garnishing, Serving, and Storing Desserts***

1. What are some appropriate garnishes for puddings?
2. How should gelating desserts be stored to serving time? Why is this necessary?

## TYPES OF COOKIES

Cookies are small, sweet finger foods. Cookies have the same ingredients as cakes, but they have more fat and flour and less sugar. Cakes are made from batters, cookies are made from doughs. Very soft cookie doughs have the most eggs and sugar. Stiff

## Cookies

| Type of Cookie | Kind of Dough | Special Instructions |
|---|---|---|
| Bar | Very soft | Dough is spread in a pan and baked. After baking, the cookies are cut into squares, rectangles, or triangles. |
| Drop | Semi-soft | Dough is pushed from a scoop onto a baking sheet. Dough is spaced about 2 inches apart to allow for spreading and then baked. |
| Rolled | Stiff | Dough is rolled into a thin sheet and cut into various shapes with cookie cutters, then baked. |
| Refrigerator | Stiff | Dough is pressed with the hands into a long smooth roll and chilled before baking. The dough is sliced to form cookies, placed on baking sheet, and baked. |
| Pressed | Rich, Stiff | Dough is forced through a cookie press or pastry tube into a baking sheet to form various shapes, and then it is baked. |
| Molded | Stiff | A small amount of dough is shaped and molded with the fingers into the desired shape (crescent, rolls, and balls), placed on a baking sheet, and baked. |

*Table 31.2*

cookie doughs have the least eggs and sugar. Semi-soft or drop cookie doughs have less shortening than other cookie doughs.

Cookies can be made in a variety of flavors, sizes, shapes, and forms. Table 31.2 describes the main types of cookies, the type dough required, and how they are formed.

### Menu Uses of Cookies

Cookies are served alone as a dessert or as an accompaniment to another dessert. Often, they are served with ice cream, sherbet, fruit, or puddings. Cookies also are popular finger foods for receptions, teas, or parties as well as popular bakery items. School cafeterias serve cookies frequently as dessert items.

Cookies are often used as part of a dessert. They may serve as the base for the dessert. For example, ladyfingers may be placed around the edge of a gelatin mold. Brownies are sometimes served a la mode with a chocolate sauce.

### Convenience Cookie Products

Many foodservice establishments purchase cookies from a bakery rather than prepare them from scratch. This saves time and energy in the kitchen. Frozen cookie dough, dry cookie mixes, and refrigerated doughs are available for commercial foodservice. With these convenience products, the labor is reduced to slice and bake or mix and bake. Additional ingredients such as raisins or chocolate chips, are often added to basic cookie dough mixes for variety.

**◆ Essential Questions: ◆**
**Types of Cookies**

1. What types of cookies are available from a foodservice operation?
2. Besides a dessert, what other menus can cookies be included on?

## PREPARING COOKIES

Cookies are easy to make. They include the same ingredients as quick breads and cakes and are mixed by the same methods.

### Ingredients

Cookies are made from flour, salt, leavener, sugar, shortening, eggs, and liquid. Cookies need less liquid and leavening and may need more fat than is used in quick breads and cakes. The ingredients in cookies serve the same purpose as those in quick breads and cakes.

The proportions of the ingredients vary with the type of cookie dough. A very soft dough has more eggs and sugar than other types of cookies. Stiff cookie dough has the least eggs and sugar, but the most shortening.

A high proportion of shortening is needed for a stiff dough. Because the shortening hardens when chilled, the dough becomes easier to handle. The shortening also makes it easier to press the dough through the cookie press without sticking.

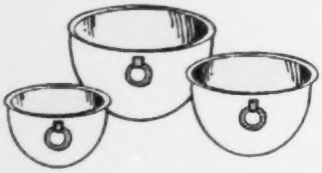
Doughs with more eggs produce chewy cookies. Ones with fewer eggs produce crisp doughs with a high proportion of eggs to flour. Stiff doughs have the lowest proportion of eggs to flour. Milk may be added if more liquid is needed.

A high ratio of sugar to shortening produces a crisp cookie. Cookies made with molasses or honey are soft because of the added moisture.

The degree to which cookies spread during baking is affected by the type of leavener used and the amounts of sugar and shortening. Baking powder produces a thick cookie. Cookies with less sugar and shortening spread less than ones made with a rich dough. Using baking soda results in a thin dry cookie.

### Mixing

Mixing methods for cookies are very much like methods for mixing cakes. Less liquid is usually used with cookies. Most cookies are mixed by the creaming method where fat and sugar are blended together (creamy consistency). Eggs and other liquid are mixed in at a low speed. The flour and leavening, including flavorings and spices, are then stirred into the fat and sugar mixture. Other methods used to mix cookies include the one-stage method in which all ingredients are mixed together at once and the sponge method which is the same as the egg-foam method for cakes.



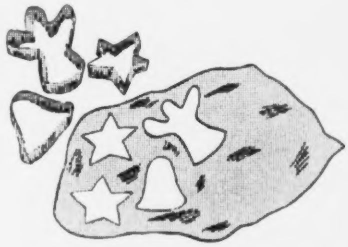
## Preparing

Cookies made from soft dough or semi-soft dough require no special preparation for baking. Bar cookie dough is simply spread in a baking pan. Spreading the dough thin results in crisp cookies. Spreading it thick makes chewy cookies. Drop cookies are dropped about 2 inches apart on a greased baking sheet using the appropriate size scoop. A No. 30 scoop makes a large cookie. A No. 40 scoop makes a medium cookie. A No. 50 or 60 scoop might be used if two cookies are considered as one serving. For a smaller, tea-size cookie, use a No. 100 scoop or the end of a teaspoon. All cookies should be uniform in size and thickness.

Stiff doughs must be refrigerated before they are prepared for baking. Chilling hardens the shortening and makes the dough easier to handle.

Dough for refrigerator cookies is formed into long rolls and wrapped in waxed paper before refrigerating. For added interest, chocolate and vanilla refrigerator doughs can be rolled together for pinwheel cookies. Strips of vanilla and chocolate dough can be braided together for spiral cookies. Checkerboard cookies can be made from four squares of dough, two of one color and two of another. The dough is stacked, alternating colors, and sliced. The slices are stacked to form a checkerboard pattern. A long sheet of contrasting dough is rolled and wrapped around the checkerboard. After chilling, refrigerator dough is sliced and placed on baking sheets. The slices can be thick or thin.

Dough for molded cookies is pressed through a cookie press or pastry bag onto a greased baking sheet. A variety of shapes can be formed.



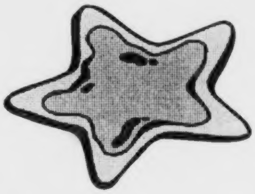
Rolled cookie dough is rolled out on a lightly floured board or canvas liner. A canvas liner is a heavy canvas baking sheet used for rolling cookies and pastries. After rolling to a thickness of 1/8 inch, the dough is cut into the desired shapes with floured cookie cutters. The cookies are lifted with a spatula and placed about 1/2 inch apart on lightly greased baking sheets.

## Baking

The time and temperature required for baking cookies depends on the type of dough and the size and thickness of the cookies. When the minimum baking time has elapsed, check the cookies for doneness. Usually, bar cookies are baked at 325°F for about 30 minutes. Most drop cookies are baked at 375°F for ten to fifteen minutes until light brown. Rolled, pressed, and molded cookies are baked about 375°F for eight to ten minutes until lightly browned. Rolled cookies should be watched carefully while baking because they burn easily.

### Decorating Cookies

Decorated cookies are frequently made in small bakeries and occasionally made in food-service facilities for special occasions.



Bar cookies may be sprinkled or rolled in powdered sugar while warm, or they may be iced with a thin layer of frosting, if desired. Rolled cookies may be spread with an egg wash and sprinkled with chopped nuts, colored sugars, or candies. An ***egg wash*** is made by mixing egg white and water (1 tablespoon water per egg white). Rolled cookies may be brushed with a very light icing made of confectioners sugar and water. Flavoring and coloring may be added. While the icing is still soft, the cookies may be decorated with colored sugars or candies. Rolled cookies should be cooled before icing.

### Serving Cookies

Cookies are served at room temperature. When served alone, two cookies can be slightly overlapped on a small plate. A small doily is placed on the plate under cookies to enhance eye appeal. Bar cookies are served a la mode or with a sauce. As an accompaniment, cookies can be placed beside a stemmed glass of fruit, pudding, or ice cream on a small, doily-lined plate.

For special occasions, several kinds of cookies are arranged on glass trays. Sometimes a tier of trays is used. The shapes and colors of cookies vary or each tray contains one kind of cookie.

## HOLDING AND STORING COOKIES

Cookies should be cooled on a cake rack. Remove cookies while still warm. Bar cookies must be cut properly to achieve the desired yield. A 12 X 20 inch pan yields forty-eight 2 X 2 1/2 inch bars by making six cuts the length of the pan and eight across. An 18 X 26 inch pan may be cut to yield sixty 3 1/2 X 2 inch, ninety-six 2 X 2 inch, or one hundred and twenty-eight 1 X 3 inch cookies. Cookies should be cooled completely before they are decorated or stored.

Most cookie doughs can be made in large amounts. Cookies may be stored in the refrigerator or freezer and used as needed. Dry cookies should be stored in covered containers. Soft, moist cookies should be placed in containers in single layers. They should be tightly covered and wrapped. The crispness of cookies can be restored by placing them in a 225°F oven for about 5 minutes before serving.

***◆ Essential Questions: ◆***
***Preparing, Holding, and Storing Cookies***

1. What ingredients are used in most cookie recipes?
2. What are the standard procedures for decorating and serving cookies?
3. What are the appropriate techniques for cooking, holding, and storing cookies?

## Chapter Highlights

☆ Desserts come in many varieties. They are classified as cookies, cakes, pastries, pies, fruit desserts, gelatin desserts, milk desserts, and frozen desserts.

☆ Fruit desserts may include fresh fruits, canned fruits, frozen fruits, or dried fruits. They may be served alone or as an ingredient to another dessert. Cooked fruit desserts usually are baked or fried.

☆ Gelatin desserts range from fruit flavored gelatin squares to elaborate mousses. Gelatin desserts include whips, chiffons or sponges, creams, and mousses.

☆ Milk desserts include puddings, custards, and baked soufflés. Puddings are thickened with a starch ingredient, such as cornstarch, tapioca, or rice. Custards are thickened with eggs. A baked custard is baked in the oven until it sets or gels. A soft custard is simmered over hot water or stirred constantly over low heat.

☆ Frozen desserts include ices, sherbets, ice creams, ice milks, and specialty frozen desserts. Ices are made from sweetened fruit juices. Sherbets are made with sweetened fruit juices and milk. Ice creams are made from cream, milk, and sugar. Ice milks are made of the same ingredients as ice creams, but contain less fat.

☆ Convenience products are available for most types of desserts. Processed fruits include canned, dried, and frozen products. Mixes are available for puddings, custards, pie fillings, and gelatin. Most foodservice operations buy commercially frozen ice cream, ice milk, ices, and sherbets.

☆ Fruit desserts are among the easiest to prepare. For fruit desserts that are cooked, baking is the cooking method used most frequently.

☆ Cookies have the same ingredients as cakes but they have more fat and flour and less sugar. Cookie types are bar, drop, rolled, refrigerator, pressed, and molded. They may be served alone as a dessert or as an accompaniment to another dessert.

☆ Depending on the type of cookie, cookie dough may be very soft, semi-soft, or stiff. Stiff dough must be refrigerated to harden the shortening before the dough is prepared for baking.

☆ Cookies should be cool before they are decorated or stored. Cookies should be stored in covered containers.

# Chapter 32

## Cakes, Fillings, Frostings, and Icings

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- angel food cakes
- blending method (or two-stage method)
- boiled frosting (or foam icings)
- chiffon cakes
- creamed frosting
- creaming (or conventional method)
- decorator's frosting (or Royal icing)
- decorator's wheel
- egg foam
- fillings
- flower nails (or icing nails)
- foam cakes
- fondant
- frostings/icings
- glaze
- high-ratio shortening
- uncooked icings
- marzipan
- pastillage
- piping
- run-out work
- shortened cakes (or butter cakes)
- simple icing, flat icing, plain water icing
- sponge cakes

Cakes are moist, tender, sweet, baked desserts. They are among the most popular desserts on foodservice menus. Many different kinds of cakes are possible by varying the basic ingredients. Different flavorings are added for variety. Cakes are baked in different shapes – round, square, rectangle, or tube. Cakes consist of one layer or several layers. They can be dusted with powdered sugar, covered with a sauce, filled, or frosted. A variety of icings and frostings in different colors and flavors are used in foodservice. Iced and frosted cakes can also be decorated with candies, nuts, coconut, or fruit.

Cakes are a traditional favorite for desserts, snacks, and special occasions like birthdays and weddings. Some cakes, such as jam cakes and fruit cakes are associated with holidays like Christmas.

## CAKES AND THEIR CHARACTERISTICS

Although there are many cake recipes available, there are three basic types of cakes – shortened, foam, and chiffon. The types of cakes differ in their mixing methods and in the proportion of ingredients used. They also differ in appearance, texture, and flavor.

### Shortened Cakes

Because the first cakes were made with butter, ***shortened cakes*** are often called ***butter cakes***. Today shortening and margarine have widely replaced the use of butter in cakes. All shortened cakes have the same basic ingredients – cake flour, sugar, leavener, flavoring, shortening, eggs, and milk.

These basic ingredients are varied to make different kinds of shortened cakes. Shortened cakes may be yellow or white. The yellow color is achieved by the use of additional egg yolks. A white cake results when only the whites of eggs and white shortening are used. Shortened cakes may be flavored with chocolate, spices, lemon, or orange.

### Foam Cakes

***Foam cakes*** contain no fat. Angel food and sponge cakes are types of foam cakes. Each of these cakes use an ***egg foam*** or beaten egg whites and steam for leavening. In addition to the egg foam, sponge cakes include baking powder for additional leavening.

***Angel food cakes*** are very white because only the egg whites are used. Angel food cakes are flavored with vanilla or almond flavoring. ***Sponge cakes*** are golden yellow because they contain a large quantity of egg yolks. Sponge cakes are flavored with either vanilla or lemon extract.

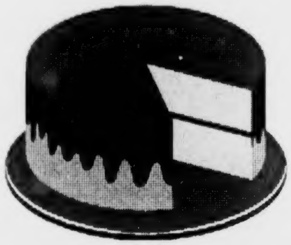
### Chiffon Cakes

***Chiffon cakes*** contain egg yolks, oil, and baking powder, as well as beaten egg whites. They are light-textured, tender, and moist. Many variations of chiffon cakes may be made by adding chocolate, fruits, nuts, and different flavorings.

### Convenience Cake Products

Many foodservice establishments purchase commercially baked cakes. These cakes are available either fresh or frozen.

Cakes prepared from cake mixes can be made with fewer and less skilled employees than cakes prepared "from scratch." Carefully selected mixes can be used to produce consistently high quality products. Most mixes contain all the necessary ingredients except water. Some also require fresh eggs. Emulsifiers are added to keep the blending of ingredients even. The best results are achieved by following the package's directions carefully.



A master cake mix is prepared in the foodservice kitchen by combining the dry ingredients, including dry milk, and cutting in the fat. Liquid ingredients and flavorings need only be added before baking. Variation can be achieved by using different spices and flavorings. Preparing cakes either "from scratch" or mixes can produce high quality products.

**◆ Essential Questions: ◆**
**Cakes and Their Characteristics**

1. What are the three basic types of cakes? Describe each type.
2. What ingredients are combined in a master cake mix?

## PREPARING CAKES

Cakes are very delicate. Their quality depends on carefully measuring or weighing the ingredients in the correct proportions and carefully following mixing and baking instructions. Even small variations in the ingredients can affect the quality of cakes. Common cake errors and their causes are listed in Table 32.1.

Standardized cake recipes are sometimes called formulas. Like scientific formulas, recipes ensure that the same results will be achieved each time they are used; following the recipe accurately will result in a perfect cake every time.

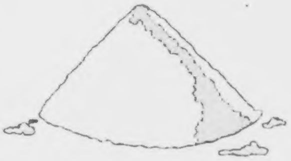
### Ingredients

High-quality ingredients are needed to produce high-quality cakes. All cakes contain flour, sugar, salt, eggs, leavening, and flavoring. Many also contain shortening and liquid. For best results, all ingredients for cakes should be at room temperature when the cake is mixed. The ingredients for cakes are usually weighed, and accurate scales are essential.

**Flour.** Cakes are usually made with cake flour. Cake flour is a low-gluten flour made from soft wheat. It has a very soft, smooth texture and a pure white color. Cake flour produces larger, more velvety and delicate cakes than all-purpose flour. The recipe will usually specify which kind of flour to use. A professional baker usually prefers to use flours that are formulated for specific purposes because these give the best results.

Cake flour blends easily with shortening. Batters made with cake flour are more stable or resistant to curdling. They are not as sensitive to over mixing or under mixing. Excessive mixing will over develop the gluten structure and cause toughness.

Accuracy in measuring the flour affects the quality of the cake. Too much flour results in a tough cake that cracks during baking. Too little flour may cause the cake to fall. To prevent sponge cakes from becoming tough, cornstarch is added to the flour to make the flour weaker.



**Sugar.** A fine sugar, such as ultra fine or baker's special, creams with shortening more easily than regular granulated sugar. It produces a cake with more volume than regular granulated sugar. Brown sugar is sometimes used for part of the granulated sugar in cakes for added flavor.

Careful measurement of the sugar is important. Too much sugar can weaken the gluten structure. The result is a heavy, coarse-textured cake that may fall. It also causes the crust to become dark. Too little sugar results in a tough cake. It also reduces the shelf life of the cake.

**Shortening.** Butter, margarine, or shortening are the fats usually used in cakes. Shortening produces a lighter cake than butter. Butter gives the best flavor, but is expensive. A ***high-ratio shortening***, developed especially for cakes, can be creamed to the highest volume. It produces a sweeter, more tender, and more finely grained cake than butter or margarine. In addition, the cake will have a longer shelf life. Artificial butter color and flavor make cakes made with shortening

## Cake Errors and Their Causes

### Crust

Too dark
- too much sugar
- oven temperature too hot

Cracked
- incorrect flour/liquid ratio
- over mixing
- oven temperature too hot

Too light
- more sugar needed
- oven temperature too low

Soggy
- bake time too short
- lack of ventilation for pan
- wrapped before completely cooked

### Texture

Heavy
- too little leavening
- too much of one ingredient
- oven temperature too low

Coarse
- more egg needed
- improper mixing
- too much leavening

Tough
- flour too strong
- over mixing
- too much flour
- too little shortening or sugar

Crumbly
- wrong type of flour used
- improper mixing
- too much sugar, shortening, or leavening

Bad Taste or Flavor
- sanitation or storage problem
- poor quality ingredients
- unbalanced ingredient amounts

### Volume

Poor Volumer
- oven too hot
- too much liquid
- not enough flour or leavening

Uneven shape
- batter unevenly spread
- hot spots in oven
- warped cake pans
- unlevel oven racks
- improper mixing

***Table 32.1***

taste more buttery. Chiffon cakes are made with oil.

Shortening improves the texture, tenderness, and keeping quality of cakes. The amount of shortening must be in correct proportion to the sugar and flour. Too much shortening weakens the gluten structure and will cause a cake to fall. Too little will cause a cake to be tough and have a poor shelf life.

**Eggs.** In foodservice, liquid eggs are preferred. However, fresh eggs in the shell, frozen eggs, or dried eggs may also be used. Eggs improve the color and the texture of the cake. Eggs provide the leavening in sponge cakes. Using too few eggs will result in a cake of reduced volume, coarse texture, and poor shelf life.

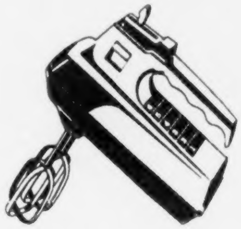
**Leavener.** Leavener causes the cake to rise and become light and porous. Shortened cakes use chemical leaveners. Baking powder is most often used. Baking soda is used with an acid like buttermilk to leaven some cakes. Sponge cakes use eggs for all or part of the leavening. The leavening action is produced by the air and steam from the beaten eggs.

Only a small amount of leavener is needed. Too much leavener results in a coarse, uneven grained cake of poor quality and flavor. Too little leavener results in a flat, dense cake.

**Liquid.** Liquid provides the moisture needed to develop the gluten. It also works with chemical leaveners to produce carbon dioxide. The liquid used in cakes is usually milk. Fresh, canned, or dried milk may be used. In foodservice, dried milk is often used because it requires no refrigeration. The liquid in a cake must be carefully measured. Too much results in a heavy, soggy cake. Too little causes the cake to be tough.

## Mixing

The way the ingredients are combined is important to the success of the cake. Deviating from the prescribed mixing method may result in a cake that is coarse, heavy-textured, sugary, or sticky. The method of mixing depends on the type of cake.



Two methods are used for mixing shortened cakes – the creaming method and the blending method. The method used depends on the proportions of ingredients in the recipe. The method described in the recipe should be the one that is used.

**Creaming Method.** The ***creaming*** or ***conventional method*** produces a light, fine-textured cake. To make a cake using this method, the softened fat and sugar are creamed together. The eggs are then beaten into the creamed mixture until thoroughly blended. The dry ingredients are sifted together and added alternately with the milk to the creamed mixture, beginning and ending with the dry ingredients. The cake batter is mixed until all the ingredients are well blended. The sides of the bowl should be scraped down during the mixing process to ensure that all the ingredients are thoroughly mixed into the cake batter.

**Blending Method.** The ***blending method*** or ***two-stage method*** is the method most frequently used in foodservice facilities. It produces a rich, sweet cake and takes less time than the creaming method. To make a cake using the blending method, the dry ingredients are sifted together in the mixing bowl. The shortening is added next and blended with the dry ingredients. The eggs, milk, and flavoring are combined and half of this liquid mixture is added to the flour-shortening mixture. Then, the cake batter is mixed until well blended, the sides of the bowl scraped, the remaining liquid added, and the mixture blended again until the cake batter is thoroughly blended.

When the foodservice uses its own master mix, the blending method is used. The dry ingredients and shortening are combined to make the master mix. The mix is stored in tightly covered containers. The remaining steps in the blending method and addition of the liquid and eggs are completed before the cake is baked.

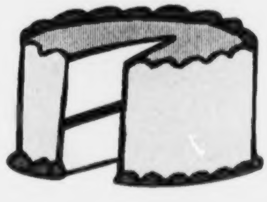
**Mixing Foam Cakes.** The mixing methods for foam cakes are different from the ones used for shortened cakes. Beating the eggs to incorporate air is part of the mixing method for each type of foam cake.

The success of an angel food cake depends on using the correct mixing methods. In the preferred method, half of the sugar is sifted together with the flour four times. The egg whites are beaten until frothy. Cream of tartar and salt are added and the egg whites are beaten until stiff. The remaining half of the sugar is gradually beaten into the egg whites before the flavorings are added. The flour-sugar mixture is folded into the egg whites by hand until the flour disappears. Over mixing causes the cake to be tough.

High quality angel food cakes are difficult and time-consuming to make. Many foodservice establishments buy commercially made angel food cakes or purchase mixes. The mixes contain dried egg whites. Because dried egg whites make a more stable foam, the danger of over mixing is reduced; however, the package directions must be followed exactly for best results.

The preferred method for mixing sponge cakes produces a fine-grained, sweet cake. To mix a sponge cake, the eggs are beaten first. Then the sifted sugar is added to the beaten eggs until thoroughly combined. The margarine is melted in the heated milk. The flour, baking powder, and salt should be sifted together twice. The dry ingredients are then added alternately with the milk to the egg mixture, beginning and ending with the dry ingredients.

Chiffon cakes are different from other foam cakes because they contain oil. Adding the ingredients in the proper order are keys to successfully mixing chiffon cakes. First, the flour, half of the sugar, the baking powder, and the salt are sifted into the mixing bowl. A depression is made in the center of the flour. The oil, egg yolks, water, and flavoring are added in this order to the flour mixture and mixed until just blended. In a clean bowl, the egg whites and cream of tartar are beaten on high until soft peaks are formed. The remaining half of the sugar is gradually beaten into the egg whites until stiff peaks are formed. The flour-liquid mixture is poured into the egg mixture and folded until blended.



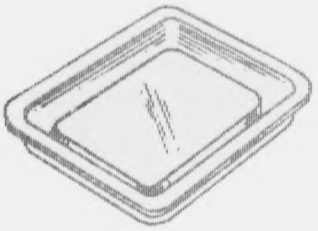
## Panning

Quantity cake recipes are available for different pan sizes. For best results, the pan size and shape indicated in the recipe should be used. If the pan is too large, the cake will not brown properly. If the pan is too small, the cake batter will overflow the pan as it rises. The cake batter should be scaled to fit the capacity of the pan. Shortened cakes usually are baked in oblong pans for single layers or round pans for multiple-layers. Most foam cakes are baked in tube pans. Sponge cakes also may be baked in oblong pans.

**Preparing the Pans.** Pans for shortened cakes and sponge cakes should be greased on the bottom and sides or lined with silicone-treated paper. Pans for angel food and chiffon cakes are left ungreased. Pans for sponge cakes need to be greased on the bottom and not the sides.

A commercially-prepared pan grease is available for greasing cake pans, or pan grease can be prepared by using one portion of shortening, one of oil, and one-half portion of flour.

**Filling the Pans.** Thin shortened cake batters will spread evenly to the corners of the pan. Thick shortened cake batters should be spread evenly with a spatula or the hand. After filling the pan, it should be rapped sharply on the work surface to eliminate any air bubbles.



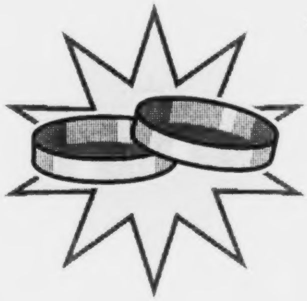
Foam cake batters should be poured into the pan carefully, tilting the pan to even the batter. The batter should be cut through with a knife or spatula to expel any air bubbles.

## Baking

Cakes should be baked as soon as possible after mixing. Baking at the correct temperature for the correct amount of time is essential for a quality product.

**Temperature.** Because temperature is critical to the cake's quality, the oven should always be preheated. Most cakes are baked at temperatures between 350-375°F. The recipe will indicate the preferred temperature.

In a conventional oven, the placement of the cake pans affects the circulation of air in the oven. Air circulation affects the distribution of heat in the oven, and uneven heat distribution will affect the quality of the cake. Cake pans should be placed on a rack about one-third from the bottom of the oven. If only one pan is used, place it in the center of the rack. Layer cake pans should be arranged so they do not touch one another or the sides of the oven. This allows the oven heat to circulate freely around the pans. When using two racks, the position of the pan should be staggered. Placing one pan directly above another should be avoided. In carousel-type ovens and convection ovens, placement of the cake pan does not affect the air circulation.



If the temperature is too low, the cake will be flat because it cannot rise properly. Instead of being brown, it will be pale and have a sticky crust. If the temperature is too high, the cake will brown before it finishes rising. The crust will be tough, cracked, and dark brown. The cake will have a dense texture.

**Timing.** Cake recipes give the approximate baking time. The exact baking time depends upon the oven temperature, the size of the pan, and the thickness of the batter. First, the oven should be preheated and the racks checked to be sure they are level. The oven should not be opened during the first half of the baking time when the cake is rising. Doing so may cause the cake to fall.

As the end of the baking time nears, the cake should be checked for doneness. If the cake is done, the crust will be golden brown. If the cake is made with fat, it should have shrunk away from the sides of the pan. A toothpick or wire tester inserted into the middle of the cake will come out clean. The cake will spring back when touched lightly with the finger. Care should be taken not to overbake the cake. Overbaking results in a dry cake.

### Cooling and Storing cakes

When cakes are removed from the oven, they must be handled carefully to prevent them from breaking apart.

Shortened cakes should be cooled slightly in the pan, on a rack and removed from the pan while still warm. This allows the cake to become firm and prevents the bottom of the cake from becoming soggy. To remove the cake from the pan, a spatula or knife is used around the edges to loosen the cake; the cake is then turned out onto a cake rack to cool. Next, the cake is turned right-side-up on another rack. The cake should be allowed to cool completely before storing or icing.

Foam cakes are cooled upside down in the pan on a rack. The legs on the tube pan can be turned down to raise the pan while the cake cools. Foam cakes should be allowed to cool completely before removing from the pan. Removing the cake before it is completely cooled may cause it to collapse or break apart.

After cooling, cakes may be filled or frosted. Cakes which will not be used immediately should be wrapped in moisture-proof wrappings before storing in the refrigerator or freezer. Cakes will keep several days in the refrigerator or several weeks in the freezer. Unrefrigerated cakes mold quickly, especially during hot, humid weather.

### ◆ Essential Questions: ◆
### Preparing Cakes

1. Why is it important to follow a cake recipe accurately?
2. What ingredients do all cakes contain? What are optional ingredients?
3. How are foam cakes cooled after baking?

## PREPARING FROSTINGS, ICINGS, AND FILLINGS

Frostings, icings, and fillings add to the flavor and appearance of cakes as well as add moisture and prevent cakes from drying out. Frostings and icings are made from the same ingredients – a mixture of sugar, liquid, and, flavoring.

Frosting is thick, fluffy, and spreadable. Icing is thin and pourable. Cake ***fillings*** are sweet, moist, pourable mixtures. Fillings are spread between the layers of cake to hold the layers together. Cream fillings like that used in pies, jam, or jelly are used as the filling for cakes. The frosting used on the outside of the cake may be used as the filling as well. Some fillings are mixtures containing nuts and dried fruits. Desserts with cream fillings should be refrigerated to prevent foodborne illness.

***Frostings*** and ***icings*** are either cooked or uncooked. Both require the very best ingredients to produce a quality product.

## Uncooked Icings and Frostings

***Uncooked icings*** and frostings are mixtures of powdered (confectioners) sugar. They are easy to make because they require no cooking. Uncooked icing is called ***simple icing***, ***flat icing***, or ***plain water icing***. It is a thin, pourable mixture of powdered sugar, liquid, and flavoring. A small amount of shortening may be added to prevent the icing from drying out and improve its keeping quality. Uncooked icing is spread with a brush or poured. A simple icing is mixed by gradually adding the powdered sugar to the liquid and flavoring and blending until smooth. A warm simple icing may be brushed on coffee cake, Danish pastries, sweetrolls, sponge cake, or angel food cake. It may be poured on top of the cake and allowed to run down the sides to create an attractive effect.

**Creamed Frostings.** A ***creamed frosting*** is the most popular type of frosting. It stays soft longer than simple icing because it contains shortening. Beating the shortening gives the frosting a smooth, fluffy texture. It is easy to make, easy to use for decorating, and keeps well.

Creamed frosting is made with butter (shortening is sometimes used, but butter is preferred), powdered sugar, and flavoring. These ingredients are creamed together. Creamed frosting contains either cream and salt or cornstarch and milk. If cream is used, it is added to the creamed mixture and beaten until light and fluffy. If cornstarch and milk are used, they are cooked until thick, cooled, and then added to the creamed mixture. Vanilla, chocolate, cocoa, coffee, or other flavorings are added for variety.

**Decorator's Frosting.** ***Decorator's frosting***, or ***Royal Icing***, is made with egg whites, shortening, and powdered sugar. It is smooth and stiff and can easily be molded into flowers, leaves, and other shapes. It becomes very hard and brittle when dry. Decorator's frosting must be beaten before each use. If it becomes too stiff, it may be thinned with water or egg whites.

## Cooked Icings and Frostings

Cooked icings are much more difficult to make than uncooked ones. Making cooked icings involves dissolving large amounts of sugar in a hot liquid and cooking the syrup to a specified temperature or stage. Using a candy thermometer is the most accurate way to be sure the syrup has reached the correct temperature. Several tests also may be used as shown in Table 32.2.

**Tests for Sugar Syrup**

| Test | Temperature | Description |
|---|---|---|
| Thread | 230-234° F | When dropped from a spoon, the syrup spins a 2-inch thread. |
| Soft ball | 234-240° F | When dropped in very cold water, the syrup forms a soft ball that flattens when removed from the water. |

*Table 32.2*

If crystals form on the sides of the pan during cooking, they should be removed. If the crystals are not removed, they will cause other crystals to form. The formation of crystals can be prevented by covering the syrup while bringing it to a boil.

Corn syrup, cream of tartar, or vinegar usually is cooked with the sugar and liquid to regulate the size of crystals formed. A small amount will contribute to a smooth product. Too much will keep the frosting from hardening.

When the syrup reaches the specified temperature, it should be cooled without stirring. Stirring causes large crystals to form in the syrup. Beating cooled syrup causes small crystals to form, resulting in a smoother product. Syrups cooked to the soft ball stage are used to make fondant and boiled frostings.

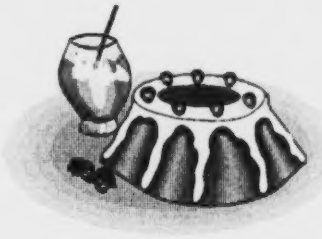
**Fondant.** ***Fondant*** is a pure white icing made from a sugar-water mixture boiled with cream of tartar. The syrup is cooled, then beaten until it is stiff and white. Finally, it is kneaded by hand until smooth. When exposed to air, fondant hardens. Commercial fondant is available in ready-to-use moist form or in the dry form, which requires only the addition of water.

Fondant is used alone as an icing or as a base for frostings. Fudge frosting is made by combining fondant, butter, melted chocolate, and evaporated milk. The mixture is beaten until the frosting is smooth, creamy, fluffy, and stands in soft peaks. Fondant will not become hard or brittle.

If the fondant is cooked too long, the frosting becomes hard and sugary. When it is not cooked long enough, the frosting remains too soft.

**Boiled Frosting.** In foodservice, most ***boiled frostings*** (or ***foam icings***) are made from a commercial fondant base. If made from scratch, hot fondant is beaten into beaten or unbeaten egg whites. The beating continues until the frosting stands in peaks. If the egg whites are beaten until stiff before the syrup is added, the frosting hardens immediately after spreading on the cake. This type of frosting is difficult to make and to use. If the syrup is added before the egg whites are beaten stiff, the frosting hardens slowly, allowing more time to spread it on the cake. If the frosting is beaten too long, it becomes grainy and brittle. Frosting should be used the day it is prepared.

**Glaze.** A ***glaze*** is a thin, sweet syrup or sauce used as a coating. It is cooked in a sauce pan or under the broiler to the desired consistency. Glazes keep baked products from drying out.



## Coloring Icings and Frostings

The food colorings used in icings and frostings are available in liquid and paste forms and also in many different colors. It is best to add a small amount of color at a time until the desired color is reached. Dark colors should be mixed one or two hours before using to allow them to reach their true color. Enough icing or frosting of each color should be mixed to complete the cake.

**◆ Essential Questions: ◆**
**Preparing Frostings, Icings, and Fillings**

1. How do frostings, icings, and fillings differ? In what ways are they alike?
2. What is fondant? How is it prepared? What are the uses in foodservice operations?

## FROSTING CAKES

Before frosting, the cake is prepared by trimming and leveling. All loose crumbs are removed from the cake. Layer and tube cakes are placed on a ***decorator's wheel*** turntable to make all sides of the cake accessible. A spatula is used to spread the frosting. As a general rule of thumb, heavy frostings are used for heavy cakes and light frostings used for light cakes.

**Sheet Cakes.** Sheet cakes are baked in large, shallow baking pans. Often the sheet cake is left in the pan and only the top is frosted. If the cake is removed from the pan, the sides are frosted, too. In this case, the sides are frosted first and then the top is frosted. Instead of frosting, powdered confectioner's sugar can be used to make an attractive design. A paper doily is placed on top of the cake, the cake is sprinkled with the powdered sugar, and then the doily is removed.

**Loaf Cakes.** Loaf cakes are served frosted or unfrosted. Loaf cakes also can be sliced lengthwise and frosted like a layer cake. These cakes may be sprinkled with powdered sugar instead of being frosted.

**Cake Rolls.** To make a cake roll, sponge cake is baked in a shallow sheet pan. The cake is turned out on a clean towel spread with powdered sugar. The lining paper, if used, should be removed. The cake is rolled loosely in the towel. When the cake is cool, it is unrolled and spread with jelly, jam, ice cream, or custard. The cake is then rerolled and sprinkled with powdered sugar or frosted.

**Cupcakes.** Cupcakes are small single-serving cakes. They usually are baked in colorful paper holders. They are served plain or frosted. To frost, a cupcake is held in each hand and dipped or twirled in a bowl of frosting or the frosting is spread with a knife or spatula.

**Petit Fours.** Petit fours are small iced cakes. The cakes may be made in diamond, square, or rectangular shapes. They are usually white cakes. They may be filled with a sweet filling. The cakes are covered with almond paste and dipped in icing. They are quite time consuming to make. Most foodservices purchase them from a bakery.

**Layer Cakes.** Layer cakes are filled or frosted between layers. To frost a layer cake, the first layer is placed top down. The filling or frosting is spread evenly to the edges. The second layer is placed on top of the first, right side up. If more than two layers are used, the rounded top of each middle layer is trimmed flat as needed. The top of each middle layer is filled or frosted and the top layer is then placed on the middle layers, bottom side down.

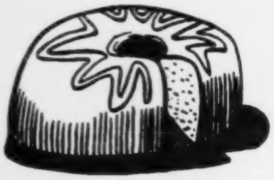
The outside of the cake may be iced with a simple icing and chilled until the icing is hard before frosting. Icing the cake first makes it easier to frost.

The sides of the cake are frosted first, working from the bottom to the top. The top is frosted last. If a smooth frosting is desired, use a spatula dipped in warm water. A special tool may be used to create ridges around the sides of the cake. A fluffy icing is usually swirled with a spatula.

**Tube Cakes.** Tube cakes are served plain, iced, frosted, or sprinkled with powdered sugar. The top of a tube cake may be sprinkled with powdered sugar. An icing or glaze is often drizzled over the top of the tube cake and allowed to run down the sides. Sometimes foam cakes are hollowed out leaving one-inch cake walls and base. The cavity can be filled with a fruit or pudding filling and the cake frosted with whipped cream, or the tube cake is sliced around and frosted like a layer cake.

Foam cakes are usually baked in tube cake pans. Foam cakes require a lighter icing than other cakes. A light icing will not overwhelm the foam cake's delicate texture. Because it has a heavier texture, a chiffon cake may also have a butter cream frosting.

Tube cakes may be frosted on the top only, on the sides only, or all over. When only the sides are frosted, a ridge may be formed at the top so the cake may be topped with fresh or glazed fruit.



◆ **Essential Questions:** ◆
**Frosting Cakes**

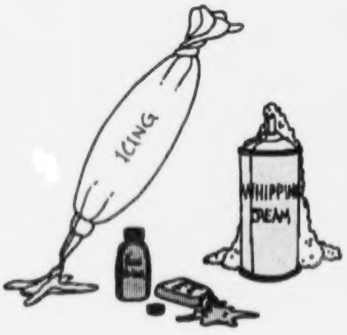
1. What is the procedure for frosting a layered cake?
2. What is a decorator's wheel and for what is it used?

## DECORATING CAKES

Decorating cakes is an art. By using a few special tools and basic icings and frostings an endless array of designs are created.

### Tools

Cake decorating is done with a few specialized tools. A decorating bag, decorating tips, and a flower nail are used to create many different designs.



A decorating bag of cloth, plastic, or parchment is used to hold the decorator's frosting. Parchment bags are best when several colors of frosting are used. Paper bags may be purchased precut or made easily from a triangle of paper. The point of the paper cone can be cut for use in making rose buds and leaves. The pastry bag may also be used with a variety of decorating tips.

The decorating bag is filled with decorator's frosting and the top is twisted closed. The bag is gripped close to the top with the twisted end between the thumb and fingers. The bag is positioned perpendicular to the cake surface (about a 90° angle) or at a slant to the surface (about a 45° angle).

The icing is squeezed from the bag as it is moved rhythmically to form the desired decoration. If too much pressure is used, the decoration will look wavy or wobbly. If too little pressure is used, the flow of icing will break.

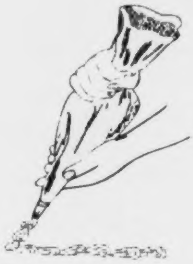
Right-handed individuals decorate from left to right and left-handed individuals decorate from right to left. All letters and piping should be form in the direction the individual usually writes. Practice is required to learn the techniques that work the best. A practice board or the back of a baking sheet pan is useful for practicing decorating techniques and styles.

Decorating tips are metal, cone-shaped tubes with a shaped point. The tips are available in a variety of designs and sizes. Commonly used decorating tips include those found in Table 32.3.

***Flower nails*** or ***icing nails*** are made of plastic or metal and are used to make individual flowers. The nail is turned as the petals of the flower are made on foil or wax paper placed on the wide surface of the nail. The surface of the nail may be flat, round, or concave depending on the depth of the flower desired.

## Piping

***Piping*** is the technique of squeezing icing through the tube of a decorating bag to make borders, flowers, lettering, and other cake decorations. Piping designs range from the simplest to the most intricate. Beginning cake decorators should practice piping the more complex designs on a practice board or on the back of a cookie sheet before piping the design on a cake.



The piping of figures, birds, and scenes is also a popular cake decorating technique. One method is to use the decorating bag to squeeze out a simple stick outline drawing on the cake surface. The various areas of the drawing are then built up or filled in with icing.

Another method for piping figures and scenes is to draw a pattern on grease-proof paper. The pattern is covered with thin waxed paper that is transparent or translucent. The decorating bag is used to trace the outline of the pattern on the waxed paper and then the design is filled in. After the decorations dry, they are carefully removed from the waxed paper and placed in the correct position on the cake.

As skills in cake decorating increase, individuals try more intricate piping methods. It takes time and thought to plan the piping for more complex designs. The piping designs are planned on grease-proof paper that is cut the same size as the top of the cake. The pattern cut from the paper can be folded, cut, and put together in various ways to aid in planning a design. Table 32.4 shows one method of using a grease-proof paper pattern cut to the size of a round cake.

Different folds, various angles, curves (both convex and concave), deep cuts, and combining patterns will give an endless variety of piping designs. Square designs can be used on round cakes, and vice versa.

Once the paper pattern is chosen to use for a piping design, a cardboard pattern is made. The paper pattern can be outlined on the cardboard and cut out. Slanted notches are cut in the edge of the pattern, and the small sections between the notches are bent up. This acts as a handle in lifting the cardboard pattern from the cake surface.

The cardboard pattern is placed in the correct position on the cake and then the icing is piped around the cardboard pattern. If the icing is close to the color of the surface to be decorated, it is easier to correct mistakes. The piping error can be lifted with a knife and the design may be repiped. When the pattern has been piped all around, the cardboard pattern should be carefully removed. Using the appropriate color of icing, other lines and details may be added freehand over the piping outline.

## Molding and Modeling

Molding and modeling decorations add another dimension to cake decorating and are done with either pastillage or marzipan. As with other cake decorating techniques, it takes practice and patience to become skilled at molding and modeling cake decorations.

## Decorating Tips

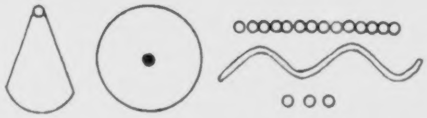
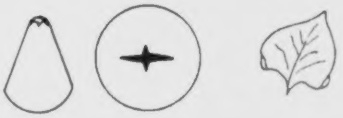
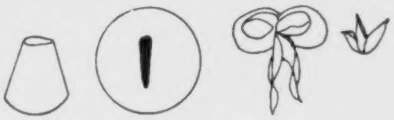
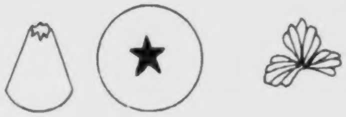
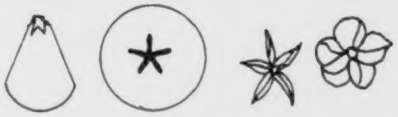
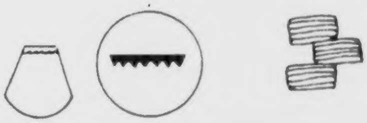
| | |
|---|---|
| Plain or Round Tip | |
| The opening is smooth and round. Use for lettering, dots, stems, stringwork, and piping. |  |
| Leaf Tip | |
| The opening is V-shaped. Use for long, thin, ruffled, serrated, fern, stand-up, or plain leaves. |  |
| Petal or Rose Tip | |
| The opening is a long slit that is very narrow at one end and wide at the other. Use for various types of flowers, streamers, and bows. |  |
| Star Tip | |
| The opening is star-shaped. Use for stars, shells, rosettes, zigzag, scrolls, and fleur-de-lis designs. |  |
| Drop Flower Tip | |
| The openings look like a flower. The number of openings is the number of petals each flower will have. Use for swirl flowers and star flowers. |  |
| Basket Weave Tip | |
| The opening is long with a smooth side and ribbed side. Use for making basket weave designs. |  |

***Table 32.3***

## Grease-proof paper pattern

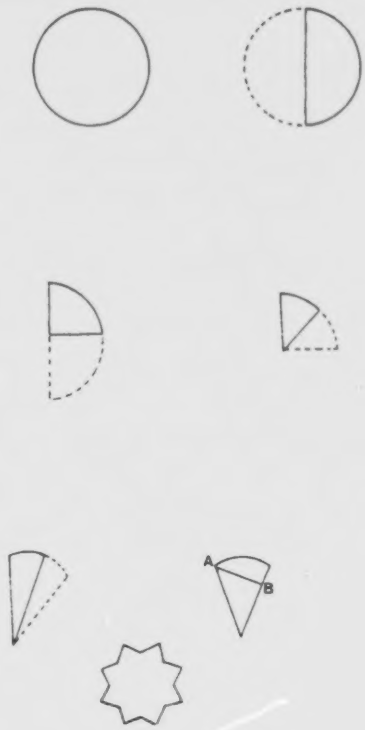
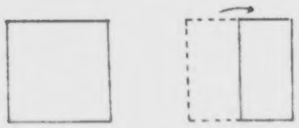
| | |
|---|---|
| Cut the grease-proof paper pattern the size of the cake surface. |  |
| Fold the pattern in half. | |
| Fold the pattern in half again (will be 1/4 size). | |
| Fold the pattern in half again (will be 1/8 size). | |
| Fold the pattern in half again (will be 1/16 size). | |
| Mark a dot at A, which will be at one corner of the curved edge. Draw a straight line from A to the side of the triangle which is illustrated as B. Cut along the line you have just drawn. | |
| Unfold, and the piping pattern design will have eight points. | |
| *The same procedures can be used for other cake surfaces. A square cake surface is illustrated:* | |
| Cut the grease-proof paper pattern the size of the cake surface. |  |
| Fold the pattern in half. | |

***Table 32.4***

## Grease-proof paper pattern, Cont'd.

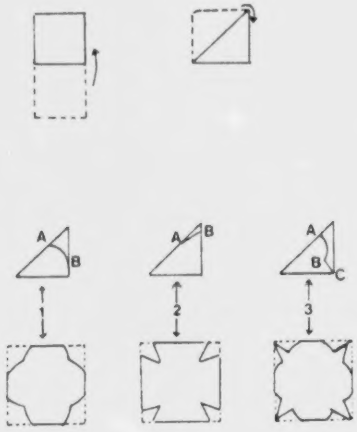
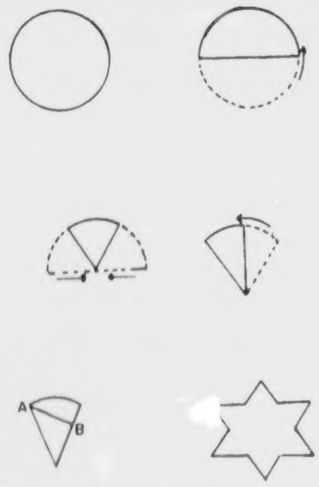
| | |
|---|---|
| Fold the pattern in half again (will be 1/4 size). |  |
| Fold the pattern in half again to form triangle. Keep point even (will be 1/8 size). | |
| Mark a line to cut on with a pencil to achieve the desired pattern. Illustrations 1 and 2 show designs from two different markings-simple curve and angle marking. | |
| The pattern for the piping design shown in Illustration 3 was folded into eighths and the line for cutting was drawn with a curve and an angle. | |
| *Experiment by changing the number of folds in your pattern. For example, to make a six-point piping pattern:* | |
| Cut the grease-proof paper pattern the size of the cake surface. |  |
| Fold the pattern in half. | |
| Fold into thirds from center to form a triangle. | |
| Fold in half again. | |
| Mark cutting line from A to B and cut. | |
| Unfold. Piping design pattern will have six points. | |

*Table 32.4*

**Pastillage.** ***Pastillage*** is a gum paste used for making flowers, candies, and other fancy decorative pieces. Recipes for pastillage vary, but the basic ingredients include gelatin, water, and confectioners' sugar.

Hands, work surfaces, rolling pins, and any models being used are dusted with cornstarch. Only a small piece of the gum paste is used and it is worked with the hands until the gum paste is smooth. The rest of the gum paste must be kept covered to prevent it from drying out. When the gum paste is smooth, it is rolled out with a rolling pin. A pattern is placed on the gum paste and then a sharp knife is used to cut around the pattern. Next, the piece is allowed to dry. If using a mold, the smooth gum paste is pushed lightly into a mold, removed, and placed to dry.

The pieces should be allowed to dry on a clean, hard surface (like glass) at room temperature. When the pieces are almost dry on the top side, they should be turned so they can continue to dry. When completely dry, the pieces are arranged on the cake surface in the planned design.

***Marzipan*** is an almond paste used as a foundation for Royal icing in wedding cakes and birthday cakes. Marzipan also is used for molding miniature flowers, fruits, and other decorative pieces for cakes, cookies, petit fours, and other baked goods.

Marzipan, a mixture of ground almonds, egg whites, icing sugar, and flavoring should have a stiff consistency. If too soft, marzipan will be hard to handle.

The marzipan should be colored with food coloring, adding small amounts at a time. Color must be worked in by kneading the Marzipan. Over-kneading marzipan should be avoided, as it will become greasy. The marzipan should be kept covered when not in use to prevent it from drying out.

To mold flowers, miniature fruits, or other shapes, some of the marzipan is rolled out on a board and cut into small pieces. All identical pieces are measured the same to allow uniformity of size. For example, to make small roses the same size, all pieces are cut one-half inch or whatever size is needed. After cutting the pieces out, each piece is molded into the desired shape. The procedure for molding the marzipan is much the same as modeling clay or play dough. First, a basic shape is made, such as small balls for apples or cylinders for bananas. The marzipan is molded into the shape that is needed. The process for making flowers begins with a small cone shape for the center and petals are added one at a time until the desired shape is reached. Petals are cut into a basic shape, such as round, square, or a strip and then shaped into the type of petals needed for specific flowers.

The completed decorations are allowed to dry on a clean, hard surface at room temperature before placing on the cake. If the decorations must be stored before using, they should be carefully placed on grease-proof paper or waxed paper in a box to protect against breakage.

## Run-out Work

Run-out work is also called soft sugar work. Working on grease-proof or waxed paper, the design is outlined with icing and then filled in with soft icing. This is done quickly to keep the outline icing from drying out. If the outline icing is dry when the filling is added the piece is likely to break.

The pieces are left on the paper and allowed to dry for several days in a warm place. When dry, the designs are stored in an airtight container until needed or until placed on the cake.

### Lettering

Lettering adds beauty and a personal touch to the cake. The types of lettering used in icing cakes includes script, printing, block letters, and double letters. Icing used for lettering must be of a thin consistency so it will flow easily. Spacing the lettering on the cake is very important, a pretty cake is ruined if there is not space to complete a word or message. Lettering is made of curved, straight, and slanted lines. To practice lettering, the words or letters can be written on grease-proof paper in the size to be used on the cake surface. The first and last letter of each word is placed in position and then the other letters spaced. For script writing, the writing begins with a letter in the middle to ensure that the word can be completed in the space allowed on the cake surface. The cake decorator then completes the writing on both sides of the middle letter. Beginning cake decorators often use a stencil for a lettering guide. The stencil is placed on the cake, icing spread over the lettering guide, and the stencil carefully removed. As a result of the stencil process, the letters will be spaced evenly on the cake surface.

**◆ Essential Questions: ◆**
**Decorating Cakes**

1. What are the basic tools needed for cake decorating?
2. Why do foodservice establishments usually purchase commercially-prepared, decorated cakes?
3. What are the appropriate techniques and procedures for cutting and serving?

## CUTTING AND SERVING CAKES

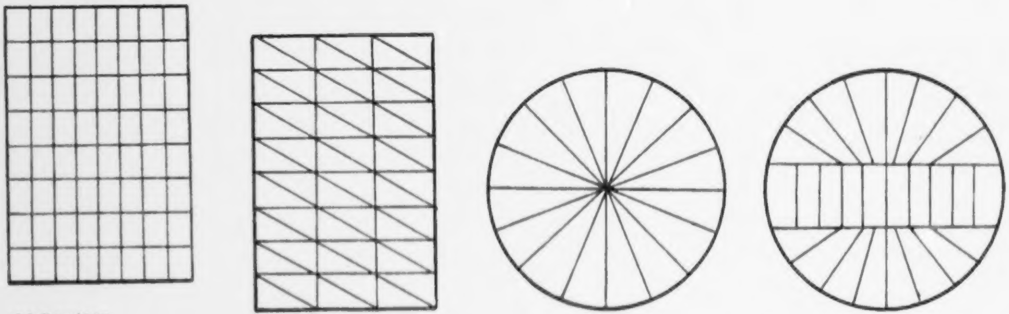
All cakes, except cupcakes and petit fours, must be cut for serving. The shape of the servings are determined by the shape of the cake. The size of the serving depends on the richness of the cake, the occasion, and the number of servings needed. Cakes are cut close to serving time to prevent them from drying out.

Round cakes are cut into slices, either wedge-shaped or straight, depending on how the cake is cut. Rectangular cakes are cut into squares, rectangles, or diamond shapes. Jelly rolls are sliced across into serving-size pieces. Figure 32.1 provides a general guide for cutting cakes.

The appropriate tool is needed for cutting cakes. Batter cakes are cut with a long, sharp, serrated knife. Cakes served for special occasions are often cut with a silver cake knife. Angel food or true sponge cakes are cut with a fork-like cutter rather than a regular knife. A cake divider ensures that each piece of cake is the same size.

Cupcakes and slices of loaf cake are easily handled finger foods. Richer cakes usually are served alone. Plain cakes are served alone, with a frozen dessert such as ice cream, or with a fruit compote.

## Guide for Cutting Cakes



64 Servings
approx 2 x 3 inches

48 Servings
approx 3 x 5 inches

14-16 Servings
9-inch, 2-layer

26 Servings
12-inch, 2-layer

⇒ *Figure 32.1*

## Chapter Highlights

- Cakes are classified into three basic types – shortened; foam; and, chiffon. Shortened and chiffon cakes contain fat; foam cakes do not contain fat.
- Many foodservice establishments purchase commercially-baked cakes. Other use commercially-prepared cake mixes or make their own master cake mixes.
- All cakes contain flour, sugar, eggs, leavener, and flavoring. Some also contain shortening and a liquid. Cake flour is usually used because it has a lower gluten content than all-purpose flour.
- Shortened cakes are mixed by the creaming method or the blending method (two-stage method). For foam and chiffon cakes, beating the eggs to incorporate air is part of the mixing method. Recipe directions should be followed carefully.
- Pans for shortened cakes and sponge cakes are greased on the bottom and sides or lined with silicone–treated paper. Pans for angel food and chiffon cakes are not greased.
- Correct oven temperature, placement of pans in the oven, and timing are important for a quality cake product.
- Shortened cakes are cooled slightly in the pan on a rack and then removed from the pan while the cake is still warm. Foam and chiffon cakes are cooled completely upside down in the pan on a rack.
- The results of common cake errors include poor volume, texture, or flavor. Generally, recipe adjustments for high altitudes are necessary.
- Frostings, icings, and fillings add to the flavor and appearance of cakes, add moisture, and keep cakes from drying out. Fillings are spread between layers of cake to hold the layers together. Frostings may be used for fillings.
- Frostings and icings are either cooked or uncooked. The basic ingredients are sugar, liquid, and flavoring. Uncooked frostings and icings include creamed frostings, decorator's frostings, and uncooked icings. Most cooked frostings used in foodservice are made with a fondant base and are more difficult to make.
- A cake is prepared for frosting by trimming, leveling, and removing crumbs. A cake that is iced first is easier to frost. Different frosting techniques are used for different types of cakes. Layer cakes are frosted on a turntable so all sides are accessible.
- Decorated cakes are served for special occasions. Cake decorating is an art. The specialized tools for cake decorating include decorating bags, decorating tips, and flower nails. In foodservice, decorated cakes are often purchased from commercial bakeries.

# Chapter 33

## Pastries and Pies

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Chapter Vocabulary

- chiffon fillings
- choux paste
- cream puffs
- cream-filled pies
- crimp
- crimper
- crullers
- custard fillings
- deep-dish pie
- docked
- double-panning
- dumplings
- eclairs
- flute
- fruit fillings
- fruit pies
- horns
- mealy crust
- meringue
- Napoleons
- pastry flour
- pastry shells
- pie press
- puff paste
- single-crust pie
- soft-filled pies
- specialty fillings
- tarts
- turnovers
- two-crust pies
- vents
- wash
- waxy maize

The term pastry is used to refer to a large variety of baked products made from doughs rich in fat. Pastries often have fillings and toppings, but they get their name from the crust, or pastry, used to make them. Pastries include cream puffs, puff pastry, tarts, and turnovers as well as the many varieties of pies.

## PASTRY PRODUCTS

### *Types of Pastry Products*

Pie crust serves as the base for a variety of pies, tarts, and turnovers. A ***single-crust pie*** is made with one thin layer of rolled pie dough or a crumb crust. The crust usually lines a pie plate. Single crust pies may be filled with a soft filling topped with meringue or whipped cream. Lemon meringue, chocolate cream, strawberry chiffon, custard, and pumpkin pies are ***soft-filled pies***. Quiche is an egg pie made in a single pie crust. ***Deep-dish pies*** use a single crust on the top rather than on the bottom. Deep-dish chicken, apple, peach, and berry pies are examples.

***Two-crust pies*** have two layers of pie dough – one lining the pie plate and one covering the filling. Both the crust and the filling are baked at the same time. Most two-crust pies are filled with fruit. ***Fruit pies***, like apple, blueberry, peach, and cherry are the most popular type of pies.

***Tarts*** are small single-serving pies. They may have one or two crusts. Tarts are filled with creamed seafood or chicken or with a fruit filling. ***Turnovers*** or fried pies are small, usually triangular, pastries filled with fruit, jam, or meat. ***Dumplings*** are made by wrapping dough around an apple or other fruit and baking until the fruit is done.

Several pastry products are made from light, rich pastry shells with a large hole in the center. ***Cream puffs*** are light round shells of pastry. They are usually filled with a cream filling or sweetened whipped cream. ***Eclairs*** are oblong, hollow pastries filled with a cream filling or whipped cream and covered with a thin chocolate icing. ***Crullers*** are deep-fried doughnuts that are lightly dusted with a fine powdered sugar.

Some pastry products are made from a pastry consisting of many layers that are paper thin. Very delicate, puffy, light pastry products are made from an extra rich, extra flaky pastry. ***Horns*** are filled with a thick cream or fruit filling. ***Pastry shells*** are used as a base for a variety of creamed dishes. ***Napoleons*** are used for cream-filled desserts.

## Convenience Pastry Products

Many foodservice establishments purchase commercially prepared pastries. Convenience pastry products available include mixes, frozen doughs, and uncooked and precooked pie crusts. The receiving clerk in the foodservice establishment should check pre-formed pie crusts for damage before accepting them.

## Menu Uses of Pastry Products

Pastries are mainly associated with desserts. However, delicious main dishes and appetizers are also made with pastries.

**Main Dishes.** Meat, poultry, or fish pies are filling and satisfying main dishes often seen on luncheon menus. The meat, poultry, or fish are combined with vegetables in a sauce or gravy or the meat mixture is baked between two crusts of pastry or covered with a single crust of pastry.

Quiche is made by combining cheese, meat, or vegetables with an egg mixture and baked in a crust-lined dish. Tart shells and turnovers may also be filled with mixtures of eggs, cheese, and meat or vegetables for delicious main dishes.

**Appetizers.** Small cream puffs, pastry shells, tarts, or turnovers may be filled with a savory filling of meat, chicken, or fish and served as appetizers. Small tarts are also filled with a quiche mixture. These hors d'oeuvres are usually served hot.

**Desserts.** Pastries are most often associated with desserts. Pies are the most popular pastry dessert. Tarts make special individual desserts. Turnovers are especially popular in fast-foodservice. Cream-filled eclairs and Napoleons are extra rich desserts.

◆ **Essential Questions:** ◆
**Pastry Products**

1. What are five different pastry products?
2. How are pastries used as main dishes?
3. What is the difference between an eclair and a cream puff?

## PASTRY DOUGH

Accurate measurement of ingredients, proper mixing methods, and careful handling of the dough helps ensure quality pie crusts and pastries. Following directions for baking temperature and time are also important.

### Types of Pastry Dough

Pie crust is of American origin. The richest, flakiest pastries, choux paste and puff pastry, originated in Europe.

Of the three types of pastry, pie crusts are most often made in foodservice facilities. Puff pastry is difficult and time consuming to make. It may be purchased ready to shape and fill.

**Pie Crust.** Most pie crusts are made from a mixture of flour, shortening, salt, and water. Pie crusts are also made from graham cracker, cookie, or wafer crumbs. The crumbs are mixed with sugar and melted butter or margarine and pressed into a pie pan. Some crusts are made of nuts or a mixture of nuts and crumbs. Crumb crusts are recommended only for pies that are unbaked, such as cream pies and chiffon pies.

**Choux Paste.** ***Choux paste*** is made with a thick mixture of flour, butter, eggs, and water. As it bakes, it forms a light, hollow shell suitable for filling. Choux paste is used for pastry items, such as eclairs and cream puffs.

**Puff Paste.** ***Puff paste*** contains about the same ingredients as choux paste, but its preparation is similar to that of Danish pastries. As it bakes it forms many layers of paper-thin pastry. It is light, delicate, and puffy.

### Ingredients

Most pastries are made with flour, shortening, salt, and water. Choux and puff pastry also contain eggs. Sugar is often added to produce a sweet flavor. Pie dough should be kept at 60°F (16°C) during preparation to assist with gluten formation.

**Flour.** All-purpose flour produces an acceptable pie crust. However, ***pastry flour***, a blend of cake flour and all-purpose flour, is best because of its low gluten content needed to produce a tender pie crust. An unbleached pastry flour produces tender pie crusts with good color.

Bread flour with a high gluten content is used for making choux paste and puff pastry. The gluten helps form the layers in the pastry.

**Shortening.** Shortening coats the particles of flour and separates the gluten strands. In this way, it shortens or makes the pastry tender. For pie crusts, a hydrogenated shortening made especially for pastry is best as it will mix easily with the flour. Butter flavor may be added to improve it flavor and color. Hydrogenated shortening is best for flaky pie crust. Butter adds flavor but is too expensive to use in quantity food production. Lard is not typically used in foodservice. Most pie crusts are 50 to 75 percent shortening. The more shortening used, the flakier the crust. For best results, the shortening should be cool (60-70°F).

Butter or margarine is used for choux paste. A specially made margarine that is waxy and pliable is used for puff paste. The butter or margarine adds color and flavor to these pastries.

**Salt.** Salt adds flavor, helps control the gluten formation, and aids in browning. A very fine salt that dissolves instantly is best for pastry making.

**Water.** The liquid used to moisten the flour so the gluten can develop is water. For pie crusts, water must be cold. Cold water prevents the shortening from becoming oily and slows the development of gluten. The less water used, the more tender the crust. Eggs will cause the pie crust to be tough and pale in color and to shrink. Too little water will make the pie dough hard to handle and result in cracking and splitting. Too much water causes the crust to become tough.

**Eggs.** Eggs add color and flavor to rich pastries. Eggs also provide leavening action. Whole eggs in the shell are added one at a time to choux paste. Fresh liquid eggs or egg yolks are used for making puff paste.

**Sugar.** In rich pie crusts and pastries, sugar adds flavor and tenderness and helps brown the product. Confectioners' sugar is used to coat some pastries like crullers.

## Measuring

Accurate measurement of ingredients is essential for quality pie crusts. Too much flour results in a tough crust. Excess shortening weakens the gluten strands making the dough overly tender. Too little shortening causes tough pastry. Using the exact amount of water for the shortening-flour mixture is especially important. Too much water causes the pie crust to be tough, to shrink, and to pale in color. Too little water makes the pie dough dry, crumbly, and difficult to roll.

## Mixing

Pie dough is mixed by using various methods. It is mixed by hand or with a mixer.

The type of crust produced is partly determined by the method used to combine the shortening and flour. A flaky crust results when the shortening and flour are mixed just until lumps the size of small peas are formed throughout the mixture (the flour is not completely blended with the fat). Cold shortening is used in this method. Ice water is used to keep the shortening cold during mixing and rolling.

A ***mealy crust*** results when the shortening and flour are mixed thoroughly to the consistency of cornmeal. Over mixing causes toughness. The baked dough is less likely to become soggy due to absorbing moisture from the filling. Flaky doughs are recommended for top crusts and prebaked pie shells. Mealy dough is recommended for bottom crusts for fruit pies and custard-type pies.

## Handling

Pie dough should be handled as little as possible. Excessive handling overdevelops the gluten. Resting, rolling, and panning are steps in handling the dough.

**Resting.** The dough should be allowed to rest in a cool place for several hours to soften the gluten and make the dough easier to roll.

After resting, dough with a high percentage of shortening may need to be refrigerated for a short time before rolling.

**Rolling.** After resting, the dough should be scaled into 6-8 oz. pieces. Larger pieces are easier for beginners to handle. Each piece will make one top or bottom crust for a 9-inch pie. The dough may be rolled by hand or machine.

To roll the dough by hand, lightly flour the pastry board or canvas and the rolling pin. The pie pan is turned upside down on the floured board and a circle drawn around it with the index finger. The dough is shaped into a round ball and placed in the center of the circle. The ball of dough is flattened with the palm of the hand into a round disk. The dough is rolled (using a rolling pin) from the center to the edge, using light, quick strokes. If back and forth motions are used, the dough will roll around the rolling pin. The dough should be checked underneath to make sure it is not sticking to the board. If it is, a little more flour can be dusted on as needed. The dough should be rolled lightly using even pressure until it is about 1/8 inch thick and slightly larger than the pie pan.

**Panning.** After rolling, the rough is folded in half and placed in the pan with the fold in the center. The dough is then unfolded and shaped to the pan. Care should be taken not to stretch or tear the dough. The crust is trimmed so that it is a little larger than the pan.

For single-crust pies, the dough is folded under, even with the edge of the pan. The edge is finished by fluting or crimping. To ***flute***, the edge is pressed between the index finger and thumb of one hand and the index finger of the other hand. This is repeated all around the pie, making a wavy edge. To ***crimp***, a crimper or a fork is used. A ***crimper*** is a small wheel-like tool used to press the crust against the rim of the pan. If the crust is to be baked before filling, it must be ***docked***, or pierced. The bottom and sides of the crust are docked with a fork. Docking allows steam and air under the crust to escape. It prevents single crusts from shrinking or puffing up.

Some bakers prefer ***double-panning*** single crusts. To double-pan, the rolled pie dough is placed over the outside of the pan and the edges are trimmed even with the edge of the pan with a knife. The crust is then docked with a fork and covered with another pie pan. The crust is baked between the two pans.

For two-crust pies, the bottom crust is placed in the pie pan but it is not docked. The filling is added to the pastry-lined pan and the edge of the bottom crust is moistened with water. The top crust is folded in half and several slits, or ***vents***, are cut into the crust with a knife. The vents allow steam to escape while baking. The crust is then unfolded on top of the filled pie, center the slits. The top and bottom crusts are sealed together by fluting or crimping. If desired, the top crust may be brushed with a wash to add color and shine. Milk, cream, or egg mixed with milk is used as a ***wash***. After brushing with the wash, the crust is sprinkled with granulated sugar to add sparkle and aid in browning. An egg wash may also be brushed on prebaked pie shells to keep the crust from becoming soggy after filling.

## ***Quantity Production***

Large operations save time by using assembly lines or by using pie presses. To produce single-crust pies using the assembly line method, three workers are needed. The first worker rolls out the pie dough and places it on the pan; the second worker trims and flutes or crimps the crust; the third worker fills the pie and places it on the baking rack.

To produce a two-crust pie using the assembly line method, four workers are required. The first worker rolls out the bottom crust and places it in the pan; the second worker adds the filling; the third worker rolls out the top crust and places it on the pie; and the fourth worker trims and flutes or crimps the pie and places it on the baking rack.

To operate a ***pie press***, the scaled dough (measured) is placed in the center of the pie pan and the pie pan is placed on the platform of the pie press. Raising the platform presses the dough against the mold and lowering the platform allows the pie pan with the molded dough to be removed. Care must be taken to ensure that there are no air pockets under the crust.

### Baking

Pies are baked in a preheated oven. Single pie crusts are baked at 425°F. A single crust is baked for ten to twelve minutes, or until lightly brown. It must be cooled before filling. If the crust is double-panned, the second pan is removed after the first part of baking. This allows the crust to brown. A two-crust pie is baked at 400-425°F for fifteen minutes to "set" the crust before the fruit filling comes to a boil. The temperature in a conventional oven may then be lowered to 350°F until the pie is done. In a carousel oven, two-crust pies are baked at 360°F for the entire time. In a convection oven, the normal, conventional oven's temperature should be lowered by 25-50°F. Two-crust pies are baked on sheet pans to catch any juices that overflow.

The baking time for filled pies varies. The type filling and the method used to prepare it determines the cooking time needed. Frozen pies are baked unthawed at 425°F for forty-five to fifty minutes. Frozen custard pies take longer.

### ◆ Essential Questions: ◆
### Pastry Dough

1. How does a puff pastry differ from a choux pastry?
2. How is flaky pie crust prepared?
3. How is a two-crust fruit pie prepared?

## PASTRY FILLINGS

Pies are named for their fillings. Pie fillings should hold their shape when the pie is cut. The juice in fruit pies should run slightly when the pie is served. The filling should have a pleasing appearance and good taste.

The preparation of pie fillings involves thickening the liquid sufficiently so the filling holds its shape when served. The principles of starch cooking should be observed; the filling should never taste heavy or starchy.

### Types of Pastry Fillings

The four kinds of pie fillings are fruit, cream, chiffon, and custard. ***Fruit fillings*** are made with thickened fruit. They include apple, apricot, blackberry, blueberry, cherry, gooseberry, peach, pineapple, raspberry, rhubarb, and strawberry. Apple is the most popular. ***Cream-filled pies*** are made with thickened milk and eggs. The flavors include banana, butterscotch, chocolate, coconut, and vanilla. Lemon filling is made with thickened water and egg yolks.

***Chiffon fillings*** have egg whites or whipped cream folded into a cream or fruit filling. These fillings are light and fluffy. Flavors include lemon, orange, strawberry, and chocolate. ***Custard fillings*** are milk and egg mixtures baked in a single pie crust. Custard, pecan, and pumpkin pies are examples of custard-filled pies. ***Specialty fillings*** include ones made with ice cream. Most of these are usually served frozen.

## Fruit Fillings

The fruits for filling pies may be fresh, frozen, dried, or canned. Because preparation of fresh fruit is time-consuming, it is seldom used in foodservice. Frozen fruit should be completely thawed unopened in the refrigerator before using. Dried fruits must be soaked and usually cooked before using. Canned, ready-to-bake pie fillings are frequently used.

Fruit fillings made in foodservice are usually prepared by one of three methods – the old-fashioned method, the hot-juice method, or the cold-juice method. In the juice methods, the juice is drained from the fruit and the fruit is set aside. Then the juice is sweetened with sugar.

**Old-Fashioned Method.** In the old-fashioned method, the fruit is mixed with the sugar, thickener, and flavorings. The fruit mixture is placed in an unbaked pie crust and dotted with butter or margarine. The filling is covered with a top crust and baked. Because fillings made by this method are more likely to boil over or shrink than ones made by other methods, it is seldom used in foodservice.

**Hot-Juice Method.** In the hot-juice method, the fruit juice is cooked with ***waxy maize***, a modified cornstarch, until it produces a clear gel. The thickened juice is cooked slightly and poured over the fruit.

**Cold-Juice Method.** In the cold-juice method, the fruit juice is thickened with instant starch. The mixture is stirred until thick, then mixed with the fruit. This method retains all of the fruit flavor.

## Soft Fillings

Soft fillings are similar to pudding. They usually have a milk base thickened with cornstarch, instant starch, waxy maize, gelatin, or eggs.

**Cream Fillings.** To prepare cream fillings, the cornstarch, sugar, and salt is blended with cold water or milk before adding it to the hot liquid. The mixture is cooked on top of the range to thicken. A little of the hot mixture is mixed with the eggs before adding them to the rest of the hot liquid; this keeps the mixture from curdling. The cream filling is then cooked an additional three minutes to cook the eggs. When cooking lemon filling, the lemon juice and grated rind are added after the mixture is thick. This keeps the acid from causing the starch to become runny.

**Chiffon Fillings.** Chiffon fillings are made by folding whipped cream or beaten egg white into a cream filling. Gelatin is often added to keep the filling firm.

**Custard Fillings.** Custard fillings are made from a milk and egg mixture that uses only eggs as the thickener. The filling and pie shell are baked together. The greatest challenge in cooking is to avoid overcooking the filling and yet baking the crust until done. Precooked starch may be added to help thicken the filling and prevent curdling. The filling is done when a knife inserted in the center comes out clean.

### ◆ Essential Questions: ◆
### Pastry Fillings

1. How are cream fillings, custard fillings, and chiffon fillings prepared?
2. How do the old-fashioned method and the hot-juice method differ?

## PASTRY TOPPINGS

Toppings add flavor and eye-appeal to pies. Cream and chiffon pies usually have a fluffy topping of meringue or whipped cream. Some fruit pies have a crumb topping instead of a second crust.

### Meringue

***Meringue*** is a fluffy mixture of equal amounts of egg whites and sugar. Meringue is made from either fresh egg whites or frozen egg whites. The egg whites should be brought to room temperature before beating for the greatest volume.

The egg whites are beaten until foamy and cream of tartar added, if desired. Tapioca, cornstarch, or a gum stabilizer also may be added. The egg whites are beaten until they stand in soft peaks, and then sugar is beaten in gradually until it is dissolved. The meringue should be thick, fluffy, smooth, and glossy. Overbeating makes the egg whites dry.

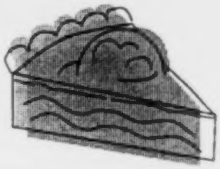
Dried meringue mixes are also available. They require the addition of water before beating. For best results, the package directions should be followed carefully.

The meringue is heaped on a cooked pie filling and swirled to form soft peaks. The meringue should be spread to attach to the edge of the pie crust and then baked at 400°F for ten minutes until lightly browned.

Sometimes meringue weeps or bleeds. This means that water droplets have formed on top or underneath the meringue. Weeping or bleeding results from too much sugar, insufficient beating, or placing the meringue on a cold filling. Stabilizers help to prevent this problem.

### Whipped Cream

Whipped cream is a popular topping for pies. Cream for whipping should have at least 30 percent butterfat. Heavy cream with more butterfat is even better. It should be well-chilled. For best results, a chilled deep bowl and whip or beater should be used as well.



The cold cream is placed in a cold bowl and whipped on medium speed until it forms peaks. If the cream is beat too long, it will turn to butter. The cream should be sweetened with powdered sugar, flavored with vanilla, and served immediately.

To improve the stability of whipped cream, stabilized liquid cream or dry milk is added to the cream before whipping. Instant gelatin with powdered sugar can be added after the cream is whipped.

### Convenience Toppings

Toppings are also available in convenience forms. Whipped cream is purchased in aerosol cans or as a mix. The mix is added to whole milk and beaten to stiff peaks. Nondairy substitutes for whipped cream are also available frozen and in mixes.

Convenience toppings cost much less per serving than whipped cream. Most remain stable for hours. Whipped cream maintains its volume only about an hour after whipping. Many convenience toppings have a taste very similar to that of whipped cream and prove to be acceptable substitutes for whipped cream.

◆ **Essential Questions:** ◆
**Pastry Toppings**

1. How is meringue made?
2. What are the advantages of using convenience whipped toppings?

## STORING AND SERVING PIES AND PASTRIES

Most pastries taste best when served the day they are made. Pastries with fillings containing eggs, milk, meat, poultry, or fish require special care. They spoil quickly at room temperature and therefore must be refrigerated to prevent any foodborne contamination from developing. Pie crust lose their quality quickly and top crusts lose their flakiness. Bottom crusts may become soggy. Meringues lose their fresh appeal if not served within a few hours of preparation.

Rich pastries are usually served without garnishes. Fruit-filled pastries and pies may be topped with a slice of cheddar cheese, a scoop of ice cream (a la mode), or a dab of whipped cream. Deep dish pies may be served with a scoop of ice cream or a pitcher of cream. Fruit pies are best served slightly warm.

Chiffon and meringue-topped pies are usually served ungarnished. Custard pies are often topped with whipped cream. Pastries with cream, chiffon, or custard fillings are served cold.

### ◆ Essential Questions: ◆
### Storing and Serving Pies and Pastries

1. What pastry fillings spoil quickly at room temperature?
2. How are pies garnished?

## Chapter Highlights

- Pastries are mainly associated with desserts but also served as appetizers and main dishes. Meat, poultry, fish pies, and quiche are popular pastry main dishes.
- Convenience pastry products include pastry mixes, frozen doughs, and pre-cooked and uncooked frozen crusts. Receiving clerks in foodservice establishments should check pre-formed crusts for damage before accepting them.
- The three types of pastry are pie crusts, choux paste, and puff paste. Choux paste and puff paste contain eggs and are richer than pie crusts. As choux paste bakes, it forms a light, hollow shell that may be filled. Puff paste forms many layers of paper-thin pastry similar to Danish pastries.
- Most pastries are made with flour, shortening, salt, and water. Some pastries also contain eggs and sugar.
- For quality pie crusts, accurate measuring of ingredients, proper mixing methods, careful handling of dough, accurate baking temperatures, and correct baking times are important.
- A flaky crust results when a high percentage of shortening is used, cold shortening and flour are mixed until lumps the size of small peas are formed, and ice water is added. Dough should be handled as little as possible.
- Large foodservice operations save time by using assembly lines or pie presses for making pastries.
- Pies are baked in a preheated oven. Single pies are usually baked at 425°F for ten to twelve minutes or until golden brown. The baking time for filled pies varies. Single-crust pies should be docked (pierced) before baking to prevent shrinking or puffing up. Some bakers prefer to double-pan single crusts. For double-crust pies, slits or vents must be cut into the top crust to allow steam to escape.
- Fruit fillings are made by the old-fashioned method, the hot-juice method, and the cold-juice method. Soft fillings include cream fillings, chiffon fillings, and custard fillings.
- Popular pastry toppings include meringue and whipped cream. Convenience whipped cream products or substitutes are available and are used by most foodservice establishments.

# Chapter 34

# Management Responsibilities

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

2C Summarize the goals and mission of various food production and service organizations.

3C Explain management functions in food production and service operations.

3E Analyze styles of supervision.

6A Summarize legislation, government regulations, and public policy affecting the food production and service industry.

6C Interpret laws and policies pertaining to food production and service establishments.

7G Use appropriate terminology related to the food production and service industry.

9A Utilize effective planning strategies for food production operations.

11H Implement quality assurance standards in all aspects of the food production and service industry.

## Chapter Vocabulary

autocratic style
bureaucratic style
child labor laws
democratic style
employee involvement
Employee's Withholding Allowance Certificate (Form W-4)
Equal Employment Opportunity (EEO)
Fair Labor Standards Act
FICA
income tax
liquor laws
management
organizational goals
policies
policy and procedures manual
procedures
sanitary codes
sanitary inspectors
sexual harassment
spectator style
Total Quality Management (TQM)
unemployment compensation
Wage and Tax Statement (Form W-2)
wage deductions
wage statements
worker's compensation

Being a foodservice manager can be an interesting and varied job. A manager of a foodservice operation is involved with many tasks, such as menu design, food purchasing, bookkeeping and payroll, coordination of work schedules, and customer satisfaction.

Foodservice employees can reach the managerial level by
- working up within an organization,
- entering a management training program,
- and taking college or trade school courses in hospitality or business management.

In order to determine properly whether a foodservice management position would be a desirable career goal, individuals must familiarize themselves with the duties and responsibilities of that position. The experience one gains as a foodservice employee can provide an excellent background for becoming a manager.

Foodservice managers must learn, as well as supervise, every aspect of food preparation and foodservice. They must assume a variety of management level responsibilities and functions which include planning, leading, staffing, organizing, and controlling. ***Management*** is the act of directing and controlling the work of others. This definition indicates that foodservice managers must have excellent skills in many areas of foodservice and must also be able to effectively use various management styles in supervising employees.

## BEING A MANAGER

### Personal Characteristics

A successful foodservice manager exhibits many of the following traits:
- works well with other people, including those from other cultures and socio-economic levels
- exhibits responsibility, is trustworthy, and has dependable behavior
- works without supervision
- reads, writes, and speaks well
- exhibits an appreciation for good food
- exhibits high standards of neatness and cleanliness
- exhibits good health
- exhibits enthusiasm and creativity on the job
- sets goals and develops ways to achieve those goals
- organizes work, makes decisions, and accepts errors as learning experiences
- exhibits a loyalty toward the company and a willingness to observe company policies
- willingly devotes long working hours to management responsibilities

Foodservice today is highly competitive. The foodservice manager plays a critical role in the success of a foodservice operation. While it is desirable to naturally possess the above traits, many of them can and must be developed to be a good foodservice manager.

### Styles of Supervision

Managers motivate and develop employees using four basic styles of supervision. Differences in personalities of the manager and the employee require a foodservice manager to become familiar with all four styles. Depending on the situation, the management style used can have both negative and positive effect on quality and production. Managers face employee personalities that require the use of each one of these styles periodically. Table 34.1 describes the characteristics of each management style.

### Styles of Supervision

| Style | Characteristics | Employee Responses |
|---|---|---|
| Bureaucratic Style | Also known as the directive manager; manager relies on rules, goes by the book like a military officer or a police officer enforcing rules; direction is in accordance to strict regulations, procedures, and policies. | Employees are less motivated and supervisor is perceived as a "watchdog;" workers will only do what is required while the manager is watching. |
| Democratic Style | Manager shares the decision making with employees to form a team approach to the duties; Democratic style is also called collaborative style; the manager is sometimes thought of as a coach; foodservice managers often use this style of supervision because it promotes team spirit and mutual respect. | Employees respond positively because they appreciate the freedom and trust to make decisions; team spirit and cooperation make the workplace a pleasant place to contribute; also employees who are managed by this style tend to value the contributions of others as well as their own. |
| Autocratic Style | Manager keeps the decision-making power to self; employees are dependent on manager for instructions, and will act only under direct supervision; this style is best used in situations where short-term, high quantity production is necessary. | Employees will respond positively for a short-term project, but tend to become resentful if this style is used on a daily basis; when employees tire of this management style, they will withhold normal contributions to the job. |
| Spectator Style | Also known as non-directive, free-rein style of management; supervisors let employees do their job and act only as a consultant available in crisis situations; managers are usually not in direct contact with employees but stay in touch through meetings, reports, and records of output; employees are perceived as professionals and experts by the manager and by themselves. | The response is very positive to this style of leadership; employees are independent and productive for long periods of time; this style promotes pride and morale as long as the boss does not become too unavailable to give the employees feedback about their work. |

*Table 34.1*

◆ **Essential Questions:** ◆
**Being a Manager**

1. What characteristics are desirable for a successful foodservice manager?
2. How can foodservice employees reach the managerial level in foodservice?
3. Which styles of supervision encourage employees to take responsibility for the accomplishment of workplace goals?

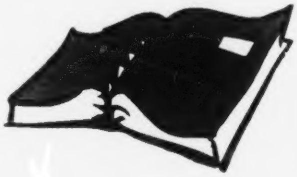
## ORGANIZATIONAL GOALS, POLICIES, AND PROCEDURES

Every successful foodservice organization works through its employees. The organization is defined as a group of people working together to achieve common goals. The key to this success is the work of an effective foodservice manager who is able to establish **organizational goals.** These are objectives that the foodservice operation wants or needs to meet in order to be financially successful. The goals of the organization change with time. The organizational goals of new, struggling restaurants are different from the organizational goals of an established, financially-stable restaurant.

In general, every foodservice operation should have the following organizational goals:

- financial stability and success
- compliance with local, state, and federal regulations
- good employee relations
- high levels of food quality and sanitation
- plans for the future of the business
- customer goodwill and good customer relations

Organizational goals are stated in broad, global terms, such as "customer goodwill" and "good customer relations." To help achieve organizational goals, policies and procedures are developed. Specifically, ***policies*** provide guidelines for operation; ***procedures*** provide the method or the means by which policies are carried out. Policies and procedures are the small steps that lead toward reaching organizational goals. They also help keep the foodservice operation in compliance with many laws and regulations.



Policies and procedures are usually written and placed in a type of reference book called a ***Policy and Procedures Manual***. By doing this, the various policies and procedures are clearly communicated to employees, regulating agencies, and other interested people. The manual can be referred to quickly when a question arises. Most of all, a written policy and procedures manual adds direction to the total organization.

Before new policies and procedures are established, the foodservice manager should review the following questions:

- Is the new policy/procedure fair to the employees and the organization?
- Does the new policy/procedure conflict with existing policies and procedures? How?
- In terms of cost efficiency and employee morale, what is the potential impact of the new policy/procedure?
- Will the new policy/procedure solve the identified problem or does it only touch on the symptoms of a deeper problem?
- Will the new policy/procedure be suitable for future situations of a similar nature?

Policies and procedures are distinguished from regular, routine managerial decisions by their permanence. When new policies/procedures are adopted or old policies/procedures are dropped, the foodservice manager should take great care that all employees are made aware and trained so change will be smooth.

The number and types of policy/procedure decisions made by a foodservice manager are numerous and varied. In general, policies deal with wages, vacations, holidays, personnel, customers, and foodservice operations. Foodservice managers who are also owners of their own establishments are responsible for determining their own policies. Policies may also be made by the owners alone, or in cooperation with the foodservice manager of their establishments.

Because procedures determine or identify the way in which policies are carried out, it is important that procedures, like policies, are in keeping with the nature and goals of the organization. For procedures and policies to be enforced, managers are held accountable and actively responsible for enforcing and monitoring the compliance to the standards.

## ***Establishing Goals, Policies, and Procedures***

Managers that are responsible for establishing goals, policies, and procedures carefully consider the decisions they make. Organizational goals are generally stated in broad terms. For the broad organizational goal to be achieved, it must be broken down into smaller, measurable steps. For example, the foodservice operation has an organizational goal of "financial stability and success," but objectives, such as "increase profits by 20 percent during the next twelve months," clearly define what is to be done to meet the larger, organizational goal.

Establishing policies and procedures is done in much the same way as setting organizational goals. The foodservice manager may want a policy that says "All employees will be paid a fair living wage." To develop a policy that is understood by employees and is enforceable, the policy might be stated, "Wages for the following employees are established as the minimum entry-level wage:

- Dishwasher $5.25 per hour
- Fry Cook $5.55 per hour."

## ***Planning***

The steps described in the last two sections are the initial stages of the managerial process known as planning. Two types of plans include standing plans which are repetitive (i.e., policies), and single-use plans (i.e., a one-time program). In addition, strategic plans are long-term plans for the organization. Planning involves the identification of goals, objectives, or problems and the making of choices with regard to the course of action chosen. Once choices are made, they are then organized into an effective procedure. The planning process requires that the following objectives be met:

1. Each objective should be identified in clear, concise, measurable terms. When trying to solve a problem, focusing on the core of the problems and not merely the symptoms of the problem is critical.
2. Different ways of solving the problem or meeting the objective should be listed.
3. All possible outcomes should be considered (positive and negative), for each possible solution listed in #2.
4. Each alternative and possible outcomes should be considered and weighed.
5. The alternative which most effectively meets the stated goal should be chosen. The chosen alternative should be fair to both the employer and employees, consistent with the other goals of the organization, and compliant with local, state, and federal regulations.

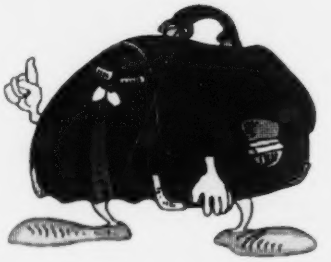
By carefully working through the planning process, the foodservice manager is able to develop policies. This process will include what task is to be done, when it is to be done, by whom it is to be done, and who is responsible for seeing it is done to completion.

Once through the planning process, a foodservice manager develops a step-by-step procedure for implementing the chosen alternatives. This helps the foodservice manager visualize just how the policies and procedures are to be implemented. Taking this step-by-step route reduces the possibility of developing a policy that does not meet the objective or is unfair to employees.

Often foodservice managers confronted with a problem immediately assume that what is needed is a new policy or procedure. The natural reaction is to think, "a new problem, a new rule." Eventually, the organization becomes overburdened with policies and procedures. Many of these overlap or duplicate efforts. This type of management confuses employees as to the correct way to do things or it strangles the organization, restricting creativity and communications. Therefore, it is important that policies and procedures are carefully thought through and well-designed before they are implemented.

## Employee Involvement

The key to utilizing a foodservice operation's goals, policies, and procedures effectively is employee involvement. ***Employee involvement*** is the active participation of employees in the identification of goals and the development of problem-solving techniques. Employees are asked to identify areas of the business which may be causing problems, such as a poorly designed menu that is unappealing to customers, and to suggest ways in which the problem could be solved. Problem-solving may not always lead to the development of a new policy or procedure. More importantly, employees are made aware of the many factors affecting the success of the business and the problems faced by the foodservice manager. Employee involvement is important to a new philosophy known as ***Total Quality Management (TQM)***. When employees are actively involved in developing ways to make the business successful, they feel more responsible for making things work smoothly. Also, employees take pride in knowing that they and their opinions are valued by their employer. Employee involvement gives the employees a sense of "ownership," and a feeling that they can make a difference in the success of the foodservice operation.



Another aspect of employee involvement is the clear communication of goals, policies, and procedures from employer or manager to employee. When employees clearly understand what is to be done, what acceptable behavior is, and what the goals of the organization are, it is much easier for them to work to help the organization run smoothly and successfully. Problems often arise when employees are not told what "the rules are" or when management forces a new policy on employees without first talking with employees about it.

Because of the vital role that effective communications play in the success of a foodservice operation, foodservice managers should work hard to develop honest, open lines of communication with employees. If employees' advice or ideas are requested, they should be seriously considered. If advice or ideas are not accepted or implemented, the foodservice manager should explain why they were not used. Employees often feel used when management says it wants employee involvement in decisions and then ignores the suggestions offered. Managers are ultimately responsible for the compliance of policies and procedures, but involved employees contribute to the quality and service of an operation.

◆ **Essential Questions:** ◆
**Organizational Goals, Policies, and Procedures**

1. Why is planning an important process in establishing organizational goals, policies, and procedures?
2. What responsibilities do foodservice managers have in regard to employees who submit ideas or suggestions?
3. Why is communication so important in a foodservice operation? Give examples.

## LAWS AND CODES RELATED TO FOODSERVICE

Many policies and procedures are designed to help the foodservice operation comply with local, state, and federal laws. While many of these laws pertain to all types of businesses, some laws are more related to foodservice establishments. The laws which most affect foodservice establishments are those related to sanitation.

### Sanitary Codes

***Sanitary codes*** or regulations are the laws which establish and enforce standards of sanitation in foodservice. Sanitary codes are often established by state and local departments of health. ***Sanitary inspectors*** are representatives of the departments of health. They are responsible for checking foodservice establishments and enforcing sanitary codes. In general, local sanitary codes are modeled after state sanitary codes. Local sanitary codes are typically stricter than state sanitary codes. Many cities require foodservice workers to have a food handling permit. It is the responsibility of foodservice managers to know, understand, and train employees to comply with sanitary codes that apply to the foodservice operation.

### Laws Relating To Employment

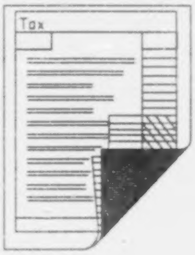
Another group of laws affecting foodservice establishments are laws regulating employment, salary, and benefits. Federal, state, and local governments have laws which control employment, salary, and benefits of foodservice employees. Some of the federal laws related to employment concerns of foodservice operations are listed below.

**Fair Labor Standards Act.** The ***Fair Labor Standards Act*** is also known as the wage-hour law. Applicable to other types of businesses as well as foodservice operations, this law regulates minimum wages, working hours, overtime pay, record-keeping, and child labor standards. Businesses that have an annual gross sales volume of $500,000 or are involved in interstate commerce are subject to this law. Interstate commerce refers to business conducted in more than one state.

**Social Security.** Social security is a federal program which provides benefits, most of which are related to retired people and the survivors of wage-earners. Payments made to social security are deducted from the employees' wages by the employer during the years of employment.

**Income Tax.** ***Income tax*** is money collected from an employee's wages if the wages go above a stated level which is established by federal law. Several forms must be completed by the employee to comply with federal tax laws. These forms include the ***Employee's Withholding Allowance Certificate (Form W-4)***. The information contained on this form helps the employer determine how much income tax to withhold from each paycheck.

**Wage and Tax Statement (Form W-2).** ***Wage and Tax Statement (Form W-2)*** is given to the employee in January of each year. This form shows the total wages received from an employer for the year. Federal, state, and local income tax paid will also be indicated as well as the amount of social security tax withheld. Social security tax is referred to as ***FICA***, Federal Insurance Contribution Act. The information contained on Form W-2 will be used by the employee in filing an income tax return.



**State Labor Laws.** The Fair Labor Standards Act allows each state to establish its own labor laws to meet the provisions of the act. While state laws will differ from state to state, some of the areas covered by state labor laws include the following:

- ***wage deductions*** - regulations which allow employers to deduct union dues, insurance premiums, credit union contributions, charitable contributions, and similar employee benefits.
- ***wage statements*** - a statement which must be given to the employee with every payment of wages. This statement must show the gross wage, deductions, and the net wages. Other information is optional.
- ***liquor laws*** - laws which govern the minimum age at which minors may be served liquor or may work where liquor is served.
- ***child labor laws*** - laws regulating the age at which minors under the age of eighteen may work at any job.
- ***worker's compensation*** - an insurance program designed to provide injured workers or the survivors of workers killed on the job with certain benefits. Workman's compensation is a state regulated program; the premiums are paid totally by the employer.
- ***unemployment compensation*** - a federal or state insurance program designed to provide income for the employee who is experiencing a job loss and is actively seeking new employment. Premiums to this insurance program are paid by the employer.

**Security in Employment.** ***Equal Employment Opportunity (EEO)*** is the term which includes laws and regulations prohibiting discrimination and/or including affirmative actions. Major federal laws related to equal employment opportunity include the following:

- *Title VII of the Civil Rights Act of 1964* - forbids discrimination on the basis of race, color, religion, gender, or national origin. ***Sexual harassment*** is a form of discrimination.
- *Age Discrimination in Employment Act of 1967* - forbids discrimination against employees 40-69 years of age.
- *Pregnancy Discrimination Act of 1978* - forbids discrimination against employees due to pregnancy, childbirth, or related medical conditions.
- *American with Disabilities Act (ADA) of 1990* - forbids discrimination against persons with physical or mental disability or the chronically ill.
- *Family and Medical Leave Act of 1993* - gives employees up to 12 weeks unpaid and job protected leave per year for themselves or spouse, parent, or child with a serious health condition.

## Compliance

The laws affecting foodservice operations are numerous and are frequently modified. Foodservice managers must develop ways to stay aware of changes made in the laws and must develop training programs so supervisors and employees are in compliance with laws.

For laws related to sanitary codes, personnel at local and state departments of health can provide the most recent information. Free workshops are often provided by these agencies for the benefit of the foodservice employee. These workshops inform the employee about the sanitary codes and techniques that employees can use to keep the foodservice establishment in compliance with the law and the customer safe from contaminated food.

Information pertaining to laws governing employment issues, such as minimum wages, may be obtained from local, state, and federal departments of labor. State employment commissions can also provide current information on federal and state regulations as well as updates on employment-related laws.

Policies and procedures are often used to develop ways of complying with laws that affect foodservice operations. Policies and procedures must be kept current with any change in the law. Employees must be kept aware of these laws and any changes which affect their employment status. In most localities, laws pertaining to food sanitation are strictly enforced. Regularly held workshops are recommended to continually reinforce the need to comply with sanitary codes. Clearly written policies and procedures related to foodservice sanitation are also necessary.

### ◆ Essential Questions: ◆
### Laws and Codes Related to Foodservice

1. What government agencies are responsible for enforcing sanitary codes?
2. What is the purpose of the federal laws related to security in employment?
3. What are labor laws? Give two examples of labor laws.

## Chapter Highlights

- Foodservice managers are responsible for being knowledgeable about current laws affecting foodservice establishments, communicating these laws to employees, and enforcing policies and procedures which keep the foodservice operation in compliance with these laws.
- Foodservice managers are involved in and are responsible for tasks such as menu design, food purchasing, and payroll.
- To guide the foodservice operation, the foodservice manager must help develop and enforce organizational goals, policies, and procedures. Policies provide guidelines for the operation of the business. Procedures provide methods or means by which policies are carried out.
- Policies and procedures are written and placed into a reference book called a Policy and Procedures Manual. New policies and procedures should be well-planned before they are implemented.
- Employee involvement is the key to effective utilization of an organization's goals, policies, and procedures.
- Sanitary codes are the laws which establish and enforce standards of sanitation in foodservice.
- Foodservice managers obtain current information about the laws affecting foodservice operations from various agencies. These include local and state departments of health, state and federal departments of labor, and state employment commissions.

# Chapter 35

# Food Cost Control

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.

9B Analyze the relationship of effective menu planning to successful food production operations.

9C Practice cost control techniques in food production operations

9F Follow standardized recipes utilized in food production.

10F Practice cost control techniques in foodservice operations.

## Chapter Vocabulary

a la carte
customer turnover
fixed/static menus
food cost percentage
forecast
labor costs
overhead costs
personnel turnover
pre-costed
profit
rotated/cycle menus
standardized recipes
surrounding /add-ons
table d' hote

The heart of a financially successful foodservice organization is cost control. Without control, the financial stability of the business is threatened. Cost controls are needed in purchasing, receiving, issuing, and inventorying of food. Menus constitute the framework of cost control.

## MENUS: THE FRAMEWORK OF COST CONTROL

Menus are the "blueprints" or "framework" that influence factors, such as equipment purchases and personnel hiring. They also help eliminate guess-work in deciding what and when to serve. Foodservice managers rely on well-written menus to aid in making decisions related to the "what-to-buy" dilemma.

Menus are fixed or rotated. ***Fixed/static menus*** are standard menus, served every day by the foodservice operation (for example, the menu offered by a fast-food restaurant). Menu changes are infrequent. ***Rotated/cycle menus*** are planned and prepared for a specific period of time, such as eleven days or six weeks. The length of the cycle will depend on the customer served, the goal of the foodservice operation, and other factors such as food storage space. In cycle menus, each day has a different menu. When the last day of the cycle has been prepared, the cycle is started over by preparing the first day's menu again. (For example, the menus used in school cafeterias rotate every six weeks.) See Table 35.1 and 35.2 for a typical two-week cafeteria cycle menu.

## How the Menu Affects Management

Because food is expensive, foodservice managers must consider food costs when preparing menus. However, cost should not be the only factor in deciding whether to include an item on the menu. The foodservice manager should match menu items to customer preferences.

The type of menu designed will dictate, to a certain degree, the skill level of personnel hired. If a menu calls for classic French cuisine, a well-trained, highly qualified chef must be hired. A small cafe offering a limited lunch menu of soup and sandwiches can train high school and college students sufficiently to prepare quality food.

The menu should use available equipment as efficiently as possible. Dishes, cookware, and utensils should be stored so that they can be located easily by food preparation workers whenever they are needed. There should be adequate work space available so that the steps in food preparation flow smoothly. Sufficient inventory should be kept on hand as is necessary to meet the production demands of the foodservice operation.

Foodservice managers must ***forecast*** or try to predict the popularity of a new menu item. Forecasting helps reduce the problem of underbuying or overbuying until a pattern of customer acceptance of an item can be determined. Foodservice organizations rely on historical data to forecast needs. For example, restaurants and cafeterias can record customers served per meal; schools can use student enrollment and hospitals can use daily patient census to predict future needs.

Many factors affect the types of menus that will be planned such as the following:

- nutritional needs of customers
- needs and desires of customers
- type of food or meal service
- size of foodservice operation
- equipment availability
- number, skill, and availability of employees
- market price and availability of food
- variety and appeal of foods
- amount of revenue needed by the foodservice operation
- sociocultural needs and desires of customers

## Pricing Menu Items

Menu space is valuable. The variety of items foodservice operations can prepare and serve is limited. Careful consideration must be given to each menu item, its cost, revenue it will generate, and its acceptance by customers.

Foodservice operations are in business to make a profit. Prices in restaurants depend on labor, overhead, food costs, and anticipated profit. ***Labor costs*** are costs related to employee wages and benefits. ***Overhead costs*** are related to rent, utilities, and equipment repair, and maintenance. Food costs are related to the costs of foods used in meal preparation. Food costs may also include the

## Industrial Cafeteria Weekly Winter Menu Cycle: Menu 1

| Item | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Soup | Homemade Chicken | Minestrone | Philadelphia Pepper Pot with Spatzles | Green Split Pea | Tomato with Barley |
| Entrée 1 | Oven Baked French Toast with Maple Syrup<br>Link Sausage | Baked Corn Pudding | Mostaccioli — Meat Sauce<br>French Bread | Vegetable Chop Suey<br>Steamed Rice | Scalloped Macaroni and Cheese |
| Entrée 2 | Veal Ragout with Spaghetti | Stuffed Bacon Wrapped Frankfurter on Bun<br>Potato Chips<br>Sliced Tomato | Pork Patties<br>Baked Acorn Squash<br>Applesauce | Baked Meat Loaf — Mushroom Sauce | Salmon Patties with Egg Sauce |
| Entrée 3 | Pepper Steak | Roast Veal with Dressing | Braised Short Ribs of Beef with Vegetable Sauce | Roast Loin of Pork — Stewed Apples | Roast Round of Beef — Natural Gravy |
| Hot Sandwich | Roast Pork with Gravy | Brisket of Corned Beef | Roast Lamb | Hot Turkey | Baked Ham |
| Potatoes | O'Brien Potatoes | Parsley Potatoes | Mashed Potatoes | Browned Potatoes | Rissole Potatoes |
| Vegetables | Frozen Baby Lima Beans<br>Zucchini Squash | Fresh Cabbage<br>Glazed Carrots | Acorn Squash<br>Buttered Peas | Mashed Rutabagas<br>Hot Spiced Beets | Cauliflower Polonaise<br>Crecle Green Beans |

*Table 35.1*

## Industrial Cafeteria Weekly Winter Menu Cycle: Menu 2

| Item | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Soup | Lima Bean | Vegetable | Chicken Broth | Beef Broth with Barley | Clam Chowder |
| Entrée 1 | Ravioli with Meat Sauce and Italian Cheese | Baked Corned Beef Hash | Baked Lima Beans with Salt Pork | Eggs à la King on Crisp Cheese Noodles | Scalloped Tuna and Peas |
| Entrée 2 | Hamburger on a Bun Plate | Turkey and Vegetable Fricassée — Corn Bread | Stuffed Cabbage Rolls, Creole Style | Braised Lamb with Vegetables | Halibut Steak — Lemon Butter |
| Entrée 3 | Roast Leg of Veal — Baked Peach | Fried Pork Chops Applesauce | Boiled Beef, Horseradish Suace | Pot Roast of Beef Brown Gravy | Baked Ham Loaf, Mustard Sauce |
| Hot Sandwich | Corned Beef | Roast Beef | Baked Ham | Smoked Pork Butt | Hot Turkey |
| Potatoes | Cottage Potatoes | Mashed Potatoes | Parsley Potatoes | Hash-browned Potatoes | French Fried Potatoes |
| Vegetables | French Fried Eggplant<br>Frozen Mixed Vegetables | Buttered Peas<br>Braised Red Cabbage | Glazed Carrots<br>Onions in Cream Sauce | Wilted Spinach<br>Cream-style Corn | Stewed Tomatoes<br>Mashed Squash |

Source: *Food For Fifty*, Mary Molt, Copyright © 1997 by Prentice-Hall. Reprinted by permission of Prentice-Hall.

*Table 35.2*

cost of supplies, china, and other similar items. ***Profit*** is the money the owner makes after all expenses are paid. Menu pricing can contribute to the success, or profit, of a foodservice operation. Understanding the steps involved in effective menu item pricing is an important concern to foodservice managers.

Menu pricing is linked to the ***customer turnover*** (number of customers served during the day) in the foodservice operation. Often, turnover is determined by calculating the number of customers occupying a dining room seat per hour. If the turnover is high, customers generally spend less on food and beverages, and the markup percentage on menu items will also be smaller.

## *Types of Menu Pricing*

Two major types of pricing menus are a la carte and table d'hote. ***A la carte*** means "from the list." Each item is listed and priced separately. This system allows the foodservice manager greater control over food costs and menu items offered. Because customers may pick and choose from separate menu items, the average amount spent per check tends to be higher. Foodservice managers are more qualified to predict the amount of food needed for each food preparation period. There is more control over purchasing and food costs tend to be lower.

***Table d'hote*** is the traditional menu pricing system. In this system, complete meals consisting of several courses are provided at one price. Because the menu is extensive, foods, even if ordered infrequently, must be kept in stock. Table d'hote systems can result in more menu items, higher food costs, and reduced flexibility.

Today's customers want lighter, more nutritious foods throughout the day. Table d'hote menu item customers may feel overcharged by accepting foods they do not want. To accommodate changes in customer preferences, many foodservice operations use a combination of a la carte and table d'hote pricing systems.

### ◆ *Essential Questions:* ◆
### *Menus: The Framework of Cost Control*

1. What is another name for cycle menus?
2. What four cost items affect menu prices?
3. What is the difference in "a la carte" and "table d' hote" menus? How do these selections affect food cost?

## FOOD COST CONTROLS

Foodservice managers must know the food cost percentages and potential costs of foodservice. These factors help maintain a desirable cost/sales relationship. The ***food cost percentage*** is the ratio of the cost of a food item to its selling price. Food cost percentages are also thought of as the ratio of the cost of a food item to the cost of all items which contribute to a foodservice operation's total sales. This ratio is used as a convenient measure of the foodservice establishment's success. Food cost percentage is determined by the following equation:

$$\frac{\text{Cost of food}}{\text{Selling price}} = \text{Food cost percentage}$$

Here is a simple illustration. A hot dog served to a customer has the following ingredients:

| | |
|---|---|
| All-beef frankfurter | \$ 0.20 |
| Hot dog bun | \$ 0.13 |
| Hot dog relish | \$ 0.03 |
| | \$ 0.36 = Cost of food |

The hot dog is sold a la carte for \$0.75. The food cost percentage for this menu item is 48 percent.

$$\frac{.36}{.75} = .48 \times 100 = 48\%$$

Once the food cost percentage is determined, or if the foodservice operation has a predetermined fixed food cost percentage, the selling price can be determined by the following formula:

$$\frac{\text{Cost of food}}{\text{Food cost percentage}} = \text{Selling price}$$

The selling price of the hot dog in the above example may be determined using this formula.

$$\frac{.36}{.48} = .75$$

If the selling price has been determined and the food cost percentage is known, the foodservice manager can determine the cost of food by using the following formula:

Food cost percentage x selling price = cost of food

Using the hot dog example, the cost of food is determined as follows:

$$.48 \times .75 = .36$$

If the hot dog is sold as the "Jr. Lunch Special" with french fries and a small soft drink, the cost of these items would have to be included in the cost of food. On a larger scale, if a table d'hote menu item is being figured, the foodservice manager would have to include the food cost of all the foods used in preparing the meal, including garnishes and other food served with menu items (known as ***surrounding items or add-ons***). When determining food costs, food cost percentages, or selling prices, surrounding items are not charged separately. Rather, the costs of these items are added together.

This type of cost control is important because it illustrates to foodservice managers what must be charged for a menu item to meet food costs (a certain food cost percentage) and still maintain a break-even point. To determine selling price with a profit percentage calculated in, the following formula is recommended:

(selling price x percentage markup) + selling prices = menu price

Standard markups are used for several groups of items. The item groups and their standard percent of markup are shown in Table 35.3.

| Item | Markup |
|---|---|
| High-priced items | 10% |
| Fast-moving items | 15% |
| Slow-moving items | 20% |
| Appetizers | 50% |
| Desserts | 40% |

*Table 35.3*

To illustrate how to figure a markup, use the hot dog example again. The selling price of the hot dog with relish was calculated to be $.75. If the hot dog was being sold at an airport snack bar, it would probably be a fast-moving item. By the standard, the percent markup on this item is 15 percent.

$.75 x .15 = .1125 or $.11

To find the final menu price for the hot dog, we first multiply 15 percent (or .15) by $.75. This is $.11. Eleven cents is then added to the selling price of $.75; the result is $.86. For convenience, most odd figures are rounded off. In this case $.86 would be rounded up to $.90. This $.90 would be the menu price of the hot dog and includes 15 percent profit markup. The specific math steps in this problem are as follows:

($.75 x . 15) = $.11 = profit markup
($.11) + $.75 = $.86 = menu price

◆ **Essential Questions:** ◆
**Food Cost Controls**

1. How is food cost percentage calculated? Explain the formula and give an example.
2. How can foodservice managers calculate the selling price of a menu item?

## STANDARDIZED RECIPES

The use of standardized recipes is another cost control technique used by foodservice managers. A ***standardized recipe*** is a formula for producing a food product. Standardized recipes can guarantee consistent food quality and quantity. Standardized recipes help control costs by identifying specific amounts of each food to be used in each recipe. Standardized recipes also control costs by identifying the number and size portions produced and save labor costs by reducing employee confusion during food preparation. Recipes and menu items can be replicated and food quality maintained, despite personnel turnover. Foodservice managers have to hire and train new employees constantly to fill all the needed positions. High personnel turnover rate is prevalent in the foodservice industry. ***Personnel turnover***, or the constant changing of employees, is very costly to a foodservice organization. Standardized recipes keep the product consistently good even when the food production crew is changing and training.

### Developing Standardized Recipes

Standardized recipes are available from many sources – trade journals, the Internet, salespeople, trade associations, and government agencies. These recipes should be tested at the foodservice operation before they are included in the menu. This ensures that the recipe is practical, tasty, compatible with equipment and personnel available, suitable for customers, and consistent with the establishment's pricing structure.

Standardized recipes should clearly convey the following:

- name of product
- amount of product to prepare
- equipment and utensils needed to prepare the product
- time required to prepare the product (this often is broken down into pre-preparation time and cooking time)
- number of portions expected (recipe yield)

- portion or serving size
- serving method

See Table 35.4 for an example of a standardized recipe for apple crisp.

Ingredients on the recipe form should be listed in the order that they will be used. The steps required for preparation of the product should be listed in the order that they are executed. If a pre-preparation step is needed, such as chilling a bowl for whipping heavy cream, this step should be listed at the beginning of the recipe. Lines drawn between major steps required for recipe preparation can help foodservice workers organize their tasks.

Ingredients that are to be mixed or combined should be grouped together and the procedures for each group should be explained beside the grouped ingredients.

All measurements should be listed by weight, if possible (weight measurements are easier to follow and are more accurate than measured units). Each food item should be listed first followed by the form, such as "onions, chopped" or "tomatoes, crushed." Instructions should be written out completely, without abbreviation (except for standard measurement abbreviations).

Only terms that are commonly understood and used by foodservice employees should be used for writing standardized recipes. If there are foodservice workers whose native language is other than English, recipes should be translated into the appropriate language. Directions used in recipes should be as specific as possible and phrases, such as "just a pinch" or "season to taste," should be avoided.

Amounts of ingredients should result in yields of 25 and 50 servings (this saves the foodservice worker time and effort in recalculating and ensures quality of the product when smaller or larger amounts are prepared).

Standardized recipes used in foodservice facilities should be printed on a 5" x 8" card for ease in reading and sealed in plastic for protection against getting soiled, torn, or damaged. Each recipe card should be numbered and categorized for organized, systematic storage and ease of locating it when needed. Clips should be attached over production tables where recipes can be placed during food preparation (this keeps the card up out of the way of the worker and makes reading easier). All recipes should be checked, reviewed, and updated periodically. The standardized recipes need to be followed by employees. If standardized recipes are not followed, there will be discrepancies in the daily food cost reports.

## ***Testing Standardized Recipes***

Foodservice managers must be able to convert, test, and direct the use of standardized recipes. Seldom can recipes be used "as is" by all foodservice operations. Variables, such as customer preferences, equipment availability, and employee skills, will affect a recipe's outcome and desirability. Recipes should be tested before they are used and periodically retested during the year, especially if the ingredients to be used have been changed or if larger or smaller quantities are desired.

Recipes may be tested by preparing them as directed on the recipe card. Key personnel or other persons knowledgeable about quantity foodservice recipes should be allowed to evaluate the product for the following:

- flavor
- appearance
- labor requirements
- preparation time
- cost

*name of product*

## APPLE CRISP

*time required to prepare product*

**Yield:** 6 | **Oven:** 375°F | **Bake:** 50 minutes

| **Apple Mixture Ingredients** | **Amount** | **Procedure** |
|---|---|---|
| vegetable oil | 1 tsp. | Pour the oil into a baking dish and spread it around with your fingers or with a napkin. Set the dish aside. |
| apples<br>lemon juice, bottled or fresh<br>whole-wheat flour<br>cinnamon | 7<br>2 Tbsp.<br>1 Tbsp.<br>1 1/2 tsp. | To make the apple mixture, wash the apples and remove the stems. Slice each apple into quarters and remove the core and seeds. Cut the apples into thin slices, about 4 to 5 slices for each quarter. In a large bowl, combine the apples, lemon juice, flour, and cinnamon. Using a wooden spoon, stir and toss this mixture for about 2 minutes. When this is thoroughly mixed, place it in the prepared baking dish. Rinse and dry the wooden spoon. |

| **Topping Ingredients** | **Amount** | **Preparation** |
|---|---|---|
| margarine<br>whole-wheat flour<br>old-fashioned oats<br>cinnamon<br>brown sugar | 3 Tbsp.<br>1/4 c.<br>1 c.<br>1/2 tsp.<br>1/4 c . | To make the topping, melt the margarine in a pan over low heat. Remove from the heat and add the flour, oats, cinnamon, and brown sugar. Using the wooden spoon, stir to combine (about 20 strokes). Sprinkle the oat mixture over the apples in the baking dish. Put your oven mits on, open the oven door, and place the baking dish in the middle of the center rack. Set your timer for 50 minutes. Let apple crisp cool on a wire rack for about 15 minutes before serving. |

**Approximate nutritive value per portion** **Calories: 257**
**Amount/portion**

*nutrition information*

**Total Fat 7.3g**
*Sat. Fat* **1.4g**
**Sodium 71mg**
**Cholesterol 0mg**

*Table 35.4*

Problems should be identified, adjustments made, and retesting should continue until a desirable product is obtained. Established evaluation forms, such as rating scales, should be used to record results of each recipe version. This helps reduce errors in judging the product, directs the evaluation process, and is structured for speeding up the scoring and evaluating of a food item. Refer to Table 35.5 for an example of a well-written standardized recipe.

## Costing Standardized Recipes

To further control costs, each recipe must be ***pre-costed.*** This is done by finding the cost of each ingredient used to make the recipe, then totaling the cost of all ingredients. The cost of all ingredients used to make the recipe is divided by the yield or the number of servings to find the cost per serving. Refer to Table 35.6 to pre-cost the recipe for broiled chopped steak.

### ◆ Essential Questions: ◆
### Standardized Recipes

1. What are the parts of a standardized recipe?
2. What are the components of standardized recipes?
3. What is the procedure for pre-costing a standardized recipe?

## Standardized Recipe: Broiled Chopped Steak

| | Weight | | Measure | |
|---|---|---|---|---|
| Ingredients | 25 portions | 50 portions | 25 portions | 50 portions |
| Beef, ground | 4 lbs. | 8 lbs. | | |
| Onions, finely chopped | 4 oz. | 8 oz. | 3/4 c. | 1/2 c. |
| Green pepper, finely chopped | 4 oz. | 8 oz. | 3/4 c. | 1/2 c. |
| Milk, whole | | | 1 c. | 2 c. |
| Eggs, large | | | 6 | 12 |
| Bread crumbs | | | 1 qt. | 2 qts. |
| Bacon, sliced | | | 25 | 50 |
| Toothpicks | | | 25 | 50 |

Directions

1. In a large mixer bowl, combine beef, chopped vegetables, milk, eggs, and bread crumbs.
2. On low speed, mix for two minutes.
3. Using No. 8 scoop, shape mixture into 4 oz. patties.
4. Place on lightly greased baking pans.
5. Wrap a slice of bacon around each meat patty. Secure with a toothpick.
6. Place patties under broiler for ten minutes on each side.
7. Serve on dinner plate with 1/2 oz. brown beef gravy.

*Table 35.5*

## Recipe Cost: Broiled Chopped Steak

| Ingredients | Amounts Usec | Market Price | Cost of Amount Used |
|---|---|---|---|
| Beef, ground | 8 lbs. | 1.12 per lb. | $8.96 |
| Onions | 8 oz. | .19 per lb. | .10 |
| Green Peppers | 8 oz. | .30 per lb. | .15 |
| Milk, whole | 2 c. | 1.89 per gal. | .24 |
| Eggs, large | 12 | .89 per doz. | .89 |
| Bread crumbs | 2 qts. | .49 per qt. | .98 |
| Bacon | 50 sl. | 1.89 per lb. | 4.35 |
| Toothpicks | 50 | .20 per 100 | .10 |
| Total cost / recipe | | | $15.86 |
| Total cost / portion | | | $.32 |

*Table 35.6*

## Chapter Highlights

- Cost-control procedures include purchasing, receiving, issuing, and inventorying of food and supplies.
- Factors that influence menu planning include nutritional needs of customers, the preferences of customers, types of meal services offered, limitations of equipment, skill and availability of employees, variety and appeal of foods, and the revenue needed.
- When pricing menus, foodservice managers must consider the labor, overhead, food costs, and customer turnover.
- Foodservice managers must know food cost percentages for all menu items.
- Standardized recipes can ensure consistent quality; control cost through the specification of foods to be used, methods of preparation, and portion size; reduce employee confusion during food preparation; and increase customer satisfaction.
- A standardized recipe should include information about recipe yield, utensils required, time required for preparation, method of serving, ingredients used, amount (weighed and measured), cooking time, and cooking temperature.

# Chapter 36

# Acquisition and Storage of Food and Supplies

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

7G Use appropriate terminology related to the food production and service industry.
8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.
10G Apply available technology in foodservice.
14B Exhibit ethical practices as defined by the food production and service industry.

## Chapter Vocabulary

AP
bid buying
steward/buyer/purchasing agent
daily quotation bid
EP
ethical practices
fixed bid
FOB destination
FOB origin
full-line purveyors
jobbers
purchase order (PO)
purchase specifications
purveyors/vendors/dealers
receiving clerk
requisition form
special payment/credit terms
specification cards
total cost
unit
unit price
2/10: NET30

Two areas that must not be neglected by foodservice management are purchasing and inventory. Few successful foodservice establishments can be operated without a good purchasing agent (often the manager) and a well established inventory control system.

## PURCHASING FOOD AND CONSUMABLE SUPPLIES

After menus have been developed and recipes tested, food production begins with the purchasing of foods and supplies. The person who is in charge of buying food and supplies is called a ***buyer***, a ***steward***, or a

***purchasing agent***. In small restaurants, the manager or a chef may do the buying.

## Characteristics of a Buyer

The buyer for the foodservice operation is faced with numerous decisions in meeting food and supply needs. Food purchases are based on the menu, food budget, food availability, labor cost, skill of personnel, and season of the year.

The buyer studies the use of food and supplies in the establishment and works with the food preparation staff to determine what is required. Standards should be set for each item purchased. Only when the buyer knows what is needed can those needs be met through effective purchasing.

To be an effective buyer, the foodservice manager must have practical knowledge about food products. Knowledge needed by the food buyer includes the following:

- the menu requirements of the foodservice operation
- sales forecasts for the next month or quarter
- amount of food and supplies on hand
- money available for purchases
- methods of quantity cookery and food production
- basic cuts of meat
- grades and standards of food
- methods of processing, grading, sizing, and packaging fresh, canned, frozen, and dehydrated fruits and vegetables, groceries, and staples
- quality tests for various products
- weight considerations for food purchases
- ways to determine the advisability of using prepared or semi-prepared foods to save kitchen labor
- equipment, utensils, and supplies used in foodservice establishments
- how to write purchase specifications for food and supplies
- the market system, including crop conditions, sources of supply, and seasonal price variations
- specific purchasing procedures
- business law and the specific regulations governing the sale of food and beverages
- past buying records
- procedures for developing orders
- procedures for ordering staple items
- procedures for obtaining bids, contract buying, and working with salespersons
- receiving and storing procedures and controls

## Professional Ethics

The food buyer must also have a high standard of professional ethics. As in any profession, it is important for the foodservice employee to exhibit ethical practices defined by the industry. ***Ethical practice*** is simply doing the right, fair, and legal thing. Many decisions concerning purchasing food and supplies should be weighed carefully so the integrity of the foodservice overall operation is never compromised. Some of the keys to maintaining ethical practices are highlighted below:

- Be courteous at all times.
- Establish regular hours for salespersons to call and adhere to this schedule. See out-of-town salespersons first. See everyone, but devote only the time needed to take care of the purchasing business.
- Be fair. There must be give-and-take in all purchase situations.
- Keep a sense of humor.
- Use rational motives in buying by evaluating all factors.
- In dealing with competitors, do not play one against the other, disclose another's prices, or pass on information.
- Use the company's money as you would your own.

- Do not discuss business affairs outside the office.
- Set a high standard of conduct and let others benefit by it.
- Never compromise your freedom of action as a buyer by accepting invitations or favors from a supplier.

## Purchasing Principles

Most buyers observe several basic principles when purchasing food and supplies, such as the following:

- Identify items to be purchased. Always start with the menu and price policy when planning food purchases. Consider how and when the items will be used. Know how much storage space is available.
- Use the amount on hand as a basis for deciding how much to order. Inventory records should show how much of each item is on hand.
- Let past use and expected use guide you in deciding how much to order. Accurate sales records and projections aid in planning purchases.
- Buy for a set period of time. This helps prevent overbuying or underbuying.
- Keep inventories as low as possible to keep costs down. A large food and supply inventory may result in loss of quality, pilferage, waste, excessive labor for handling, errors in inventory and recordkeeping, and tying up funds needlessly.
- Order to specification. Clearly describe the quantity and quality needed.
- Buy the quality needed at the lowest cost. Compare prices from several sources. Compare end cost of items in several forms and grades. Higher purchase costs may actually result in lower end costs for some items.
- Beware of bargains. Consider end cost as well as purchase price when comparing items.
- Deal with reliable and reputable suppliers.
- Purchase locally from a few suppliers unless substantial savings can be made elsewhere. Purchasing from local suppliers makes communication easier, and nurtures positive community relations. It is also easier to obtain food and supplies in case of an emergency. Do not try to deal with too many suppliers.
- Be familiar with standard abbreviations. For example ***AP*** means "as purchased," ***EP*** means "edible portion," and ***FOB*** means, "free on board" (delivered by the seller without charge to the buyer). ***FOB origin*** refers to the place the product originated and ***FOB destination*** refers to the place the product is to be delivered.

## Five Steps to Effective Purchasing

To be effective buyers, foodservice managers must have a definite plan for purchasing food and supplies. The following five steps are recommended for purchasing:

1. *Determine what is needed.* Menu planning, standardized recipes, and inventory records will tell the buyer what foods and supplies are necessary to prepare the menu items for the next menu period. Computer software programs are available that list ingredients needed to prepare particular menu items.

2. *Determine the quality and quantity desired for each item.* The intended use of each item purchased must be known so that the right quality can be ordered. The quantities used regularly must be known so that the right amounts and sizes can be ordered. Quality and quantity information are used to make ***purchase specifications*** for each item ordered. Several types of specifications are given in Table 36.1.

## Types of Specifications

| Specification | Use |
|---|---|
| Wholesomeness | Ensures that product is healthful and nutritious |
| Use of Product | Aids in choosing the appropriate type or grade, or aids in making subsitutions when necessary |
| Grade | Classifies foods by a descriptive term or a number to ensure uniform quality |
| Container Sizes | Aids in choosing an amount that can be used within a reasonable period of time without waste |
| Yields | Tells number of usable portions of the purchased amount |
| Financial Factors | Gives seasonal price variations, peak demand periods, quality variations, and overall serving costs |
| Other | Includes specifications for weight, size, count, pack, style, and degree of ripeness |

*Table 36.1*

When standardized recipes are used, purchase specifications can be developed for each recipe. The buyer then keeps a file of ***specification cards*** for all foods used in the foodservice operation. The specification cards contain all the information the buyer needs for ordering the needed item. The cards are filed alphabetically or numerically for easy reference. Suppliers and current prices for the items are recorded on each card. If specifications are changed, every worker handling the product must be instructed and shown how to use the product. This information may also be kept on a computer program.

The food buyer may find it helpful to sample products before buying them in large quantities. The buyer can try products in several ways before making large purchases. One way is to invite the supplier to provide samples for inspection. Another is to attend periodic tasting parties held by the supplier. A third is to purchase and try a small amount of the product. This method provides an opportunity for yield testing and preparation time comparisons.

3. *Obtain price information periodically from several sources.* Price quotes should be requested from suppliers on a regular basis. Obtaining prices from a number of suppliers refers to ***bid buying***. A ***fixed bid*** is often used for purchasing large quantities and ***daily quotation bidding*** is used for perishable items purchased every few days. Also, suppliers will generally notify their customers of price changes.

In addition to obtaining price quotations from competing suppliers, the food buyer should make use of other sources of market information. One excellent source is the government.

Federal and local government releases in daily newspapers and in newsletters provide information concerning commodity food prices, crop conditions, and other valuable information. This information can be found in any of the following:

- local trade sheets
- radio and television programs
- commercial market reports
- price quotations from suppliers
- Internet

4. *Select the supplier and place the order.* The buyer must consider a variety of factors in choosing a supplier. Such considerations should include the following:

- Does the supplier generally have, or can the supplier quickly obtain, the food or supplies needed?

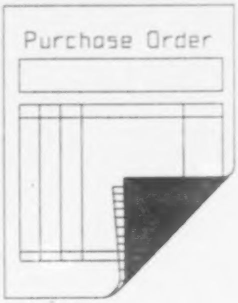
- Does the supplier maintain a large enough stock to meet the needs of customers?
- Will the supplier deliver goods when they are needed?
- Will the supplier make emergency deliveries?
- Does the supplier offer credit?
- Will the supplier store items and deliver the items as needed?
- Does the supplier partially prepare some foods, enabling the foodservice establishment to cut labor costs? For example, can scrubbed and wrapped potatoes for baking be obtained?

Many suppliers are now known as ***full-line purveyors.*** This means that the company sells a wide array of items used by foodservice operations. These companies may offer cooking and service equipment, fresh meats, fruits, and vegetables, and other items used by foodservice operations. Software programs are being utilized that will generate a purchase order for the supplier. It is possible to order products on-line.

***Special payment terms*** or ***credit terms*** are of interest to the food buyer. Some suppliers will offer a discount to the buyer if the bill is paid in full before a certain date. The most common credit term is ***2/10: NET 30***. This means that if buyers pay their bills on or before the 10th day of the month, they will receive a 2 percent discount. If the bills are paid between the 11th and the 30th day of the month, full payment will be expected. For example, if the ABC Cafe has a food bill from ACME Foods for $600.00, the manager of the cafe will save $12.00 (2 percent of $600.00) if the bill is paid on or before the tenth day of the month. After the tenth day, the manager must pay the full amount.

Food and supplies may be purchased from several types of suppliers. ***Purveyors***, ***vendors***, and ***dealers*** are types of suppliers that often fill orders from buyers.

Perishable foods are usually purchased from any of several suppliers. Quotations on prices are obtained from each; then, the order is given to the one offering the lowest prices for the quality. This type of buying is done usually by telephone, but it may also be done through salespeople or through visits to the supplier's warehouse. Perishable foods should be purchased no more than two or three delivery days in advance.



Perishable foods make up the largest part of the total food purchases in many foodservice establishments. These foods include meats, poultry, seafood, fruits, vegetables, butter and eggs, and must be purchased frequently. They vary more in both quality and price than other food items. For those reasons, they require more of the buyer's time and effort.

Staple foods are usually purchased from salespersons who call on the buyer regularly. These foods include processed foods, packaged foods, and other groceries. Because these foods vary less in quality than perishable foods, they can be purchased on a more routine basis. Sources for staple foods include wholesale grocers or ***jobbers*** who specialize in institutional products, and national food manufacturers who may sell direct or through distributors. The establishment may choose to stock about one week's needs of staple foods plus a 50 percent safety factor. (Jobbers are middle-persons who purchase goods in quantity with the purpose of selling to dealers.)

Prepared and convenience foods, such as breads, rolls, pastries, milk, ice cream, and coffee are often purchased regularly from one local source. Deliveries are made daily or several times a week.

When orders are placed, it is vital that the buyer complete the necessary forms. The form used to order food and supplies is known as a ***purchase order*** or a ***P.O. form***. Information contained on the purchase order indicates the quantity desired, a clear description of the product desired, the name and address of the supplier, expected delivery date, and the item cost. A separate purchase order must be written for each supplier. Each purchase order is given a number. Two copies of the order are prepared which list the items of delivery. If the supplier cannot deliver an item by the date needed, then the buyer can be told in time to order the item from another supplier.

Information that is typically included in a purchase order is as follows:

- ***Unit*** – refers to the size or type of container in which the food is sold. Examples of units are sack (100-lb.), gal., can, lb., or case.
- The ***unit price*** is the price paid for one unit. For example, the unit price for tomatoes might be 59 cents per pound. The unit price for bread might be 45 cents per loaf.
- The ***total cost*** is the price for the amount ordered. To determine the total cost of an item, multiply the unit cost by the quantity ordered.

The buyer must be sure that enough storage room is available. The quantity of food and supplies ordered varies with the type and size of the foodservice operation, the amount of storage room, and the nature of the product. Staple foods can be ordered in large quantities since they keep longer than other foods. Other foods, like fresh fruits and vegetables, spoil very quickly. These foods must be ordered in small quantities and delivered often.

Policies must be established regarding who can sign purchase orders. Procedures for using delivery and inspection forms, signing invoices, and so on must also be established.

5. *Follow up on the order, if needed.* One copy of the purchase order is kept in the buyer's files; the other is sent to the receiving clerk. In some cases a third copy is forwarded to the supplier to confirm the order.

The following are some advantages of using the purchaser order:

- provides a complete record of the order for each supplier
- provides a guide for the receiving clerk, allowing time to take action on merchandise arriving late, and it immediately indicates overshipment or undershipment of orders
- provides the receiving clerk with an immediate verification of invoice prices with accepted quotations

### ◆ Essential Questions: ◆
### Purchasing Food and Consumable Supplies

1. What factors must a buyer consider when choosing a supplier?
2. What is the purpose and function of a purchase order?
3. What are six important guidelines in maintaining a high standard of ethics?
4. What areas of practical food knowledge does a buyer need to know?

## RECEIVING, INSPECTION, AND STORAGE

A major part of effective purchasing is the receiving, inspection, and storage of food and supplies that have been ordered. Without cost and quality checks during these phases, cost-control techniques established during purchasing are rendered useless.

### Receiving and Inspecting

The buyer must take time to check deliveries, making certain that the quality and specifications of the merchandise delivered agree with the order. Count and weight checks may be left to the ***receiving clerk***. The main job of the receiving clerk is to count and weigh the food and supplies delivered and to record what is received. As an important member of the cost control team, a receiving clerk should be alert, accurate, and have some knowledge about food. Above all, the receiving clerk must be trustworthy. The receiving clerk should also appreciate the importance of receiving both good quality as well as accurate quantity ordered. Quality is also usually checked by the manager, assistant manager, caterer, dietitian, or one of the chefs.

Various methods of receiving orders are used. In the usual method of receiving, the receiving clerks receive duplicate purchase orders which list the goods ordered. They will then check to see that the goods were delivered and are then required to make appropriate entries on receiving records. This method forces receiving clerks to count or weigh each item, not just to copy the information from the invoice or delivery ticket.

Methods of receiving vary from one foodservice operation to another. Food and supplies should be received and checked in an efficient and orderly manner. In the receiving process, foods received are matched with what was ordered, using such tools as scales, thermometers, or counts to check quality and quantity.

Errors in deliveries frequently occur. Unless a careful check is made of count, weight, and quality, costly losses can result.

Items that do not conform to specifications or items that are damaged should not be accepted. When deliveries are not satisfactory, the purveyor must be notified. Arrangements should be made to return the merchandise or obtain proper credit. Whoever accepts delivered merchandise should always note exceptions when signing delivery papers.

### Storage

Careful consideration must be given to the appropriate storage of foods and supplies once they are delivered. To reduce the chance of spoilage and to maintain quality, foods should be stored properly for the shortest period of time possible.

Losses due to spoilage may be avoided by storing foods in well-ventilated areas at proper temperatures and by avoiding excessive storage times. Contamination by vermin, rodents, leaky pipes, dirt, dust, broken containers, or other foreign substances should be prevented.

### Storeroom Control

Strict storeroom controls are necessary to prevent pilfering or spoilage. Theft in foodservice operations can be reduced by strict storeroom controls. Three basic rules for safeguarding the storeroom are listed below:

1. Keep the storeroom locked.
2. Safeguard the storeroom keys when not in use.

3. Do not permit unauthorized persons to enter the storeroom.

**Issuing.** In larger foodservice operations, the issuing of foods and supplies is strictly controlled. To obtain foods and supplies, workers must complete a ***requisition form*** listing the items needed.

The department head must sign the form before the requisition order can be filled by the storeroom clerk. With this system of issuing food and supplies, orders are not filled without a properly signed requisition.

Correctly completed requisition orders should include the date, the department or area of food preparation requesting the supplies, the name and grade of the item needed, and the signature of the department head. The description of the name and grade of an item must be clear.

**Inventorying.** There are different methods of inventorying foods and supplies. Conducting inventories can help control costs. One might suspect pilferage, spoilage, incorrect pricing, or mathematical errors as reasons for inventory inaccuracies.

End-of-the-month evaluation of inventory records can provide foodservice managers insight into the operation, provide information necessary for preparing orders, and indicate how much money is tied up in food supplies. Although adequate supplies are needed, it is unwise to have large stock piles of items "just in case." This reduces capital which may be needed for other uses in the foodservice operation. Also, needlessly large inventories increase the risk of pilferage, theft, and spoilage.

### ◆ Essential Questions: ◆
### Receiving, Inspection, and Storage

1. What are the duties of the receiving clerk?
2. How can workers in larger foodservice establishments obtain food and supplies using a requisition form? Explain the process.

## Chapter Highlights

- Food buyers must consider the quality of food needed and its intended use, know the food specifications or standards, and know the correct procedure for purchasing food and supplies. Food purchases are based on the menu, food budget, food availability, skill of the food preparation workers, seasons of the year, and equipment availability.

- A food buyer is familiar with all ethical practices in the foodservice industry and upholds a professional code of ethics.

- A purchasing plan includes determining what is needed, determining quality and quantity desired for each item, obtaining prices from several sources, selecting a supplier and placing an order, and following up on the order if necessary.

- The buyer or receiving clerk must take time to check deliveries, making certain that the quality and specifications of the merchandise delivered agree with the purchase order list.

- Careful considerations must be given to the appropriate storage of foods and supplies once they are delivered.

- Inventories can help foodservice managers monitor food costs, plan for market orders, reduce the chance of losses due to spoilage, and control employee theft or pilferage.

# Chapter 37

# Finance and Accounting

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

1D Analyze the impact of technological innovations on the food production and service industry.

2A Identify policies related to wages, benefits, and performance of employees.

3G Practice effective management of resources.

7G Use appropriate terminology related to the food production and service industry.

10G Apply available technology in foodservice.

## Chapter Vocabulary

accounts payable
accounts receivable
assets
balance sheet
break even analysis
budget
depreciation
e-commerce
employee schedules
equity/capital/
net-worth
gross profit
hardware
integrated software program
liabilities
net profit
primary expenses
profit and loss statement
real estate taxes
software/computer applications
tax rate
time cards/time records

Accounting and recordkeeping, budgeting, cost control, and money handling are important parts of the foodservice operation's financial management system. Trained bookkeepers and accountants are usually employed for these tasks.

Many times, however, foodservice managers are responsible for bookkeeping and accounting responsibilities. These managers must be thoroughly familiar with accounting procedures.

**Common Reasons for Low Profit or Loss**

| Problem | Possible Causes | Possible Solutions |
|---|---|---|
| High payroll | Too many workers have been hired. Workers are being paid too much. | Increase income. Lay off some employees. Cut the amount paid each worker. |
| High food and supply costs | Food is spoiling because too much was purchased. Too much is being paid for food and supplies. Food is being stolen. | Make smaller purchases. Find less expensive suppliers. Buy cheaper quality. Practice portion control. Reduce waste. Eliminate theft. Raise prices. |
| Low income | Menu items are priced too low. Not enough advertising is being done. Too few customers are coming in. | Advertise more. Feature low-priced daily specials. Be sure facility is clean and attractive. Raise prices. |

*Table 37.1*

If the foodservice operation experiences a loss or only a small profit, the manager must find the cause and take steps to correct it. Some common reasons for low profit or a loss are shown in Table 37.1.

### Financial Records

Most business accounting systems require two major financial statements which are essential to the operation of the business. These two financial statements are the ***balance sheet*** and the ***profit and loss statement***. The balance sheet lists the assets and liabilities and owner's equity of the foodservice establishment. The profit and loss statement lists the total sales, costs, expenses, and profits for the foodservice establishment.

## THE FINANCIAL ASPECTS OF FOODSERVICE OPERATIONS

Prices and wages change rapidly. Managers must be aware of the foodservice operation's income and expenses at all times. Balance sheets and profit and loss statements allow managers to quickly assess their foodservice establishment's financial position.

### Balance Sheet

The balance sheet is an up-to-the-moment picture of the foodservice operation's financial status. The balance sheet tells what the operation owns and owes. The balance sheet must be kept up to date. From the assets and liabilities, foodservice managers can determine the net worth of their operation. An example of a balance sheet is shown in Table 37.2.

## Maritown Restaurant
## Balance Sheet
## December 31, 2003

### Assets

| | |
|---|---|
| Current Assets: | |
| Cash (in bank and on hand) | $ 5,864 |
| Accounts Receivable | 1,526 |
| Food and Beverage Inventory | 2,480 |
| Supplies | 560 |
| *Total Current Assets* | $10,430 |
| Fixed Assets: | |
| Stationary Kitchen Equipment | $10,500 |
| Hand Kitchen Equipment | 2,493 |
| Dining Room Furniture and Fixtures | 3,829 |
| Tableware, Glassware, Flatware and Linens | 2,578 |
| *Total Fixed Assets* | $19,400 |
| *Total Assets (Current and Fixed)* | $29,830 |

### Liabilities and Owner's Equity

| | |
|---|---|
| Current Liabilities: | |
| Accounts Payable | $ 3,528 |
| Installment Accounts or Bank Notes Payable | 14,680 |
| Payroll and Occupational Taxes Payable | 892 |
| *Total Current Liabilities* | $19,100 |
| Owner's Equity: | $10,550 |
| Total Owner's Equity | $10,550 |
| *Total Liabilities and Owner's Equity* | $29,650 |

***Table 37.2***

The ***assets*** of the operation are the things owned or in possession of the foodservice operation that have monetary value. Assets include cash on hand or in the bank, money owed the foodservice operation, known as ***accounts receivable***, and food, beverages, and supplies in the current inventory. These items are identified on the balance sheet as current assets because they are more "fluid" or subject to changes within a short period of time. Fixed assets refer to equipment that tends to be stable over time, such as kitchen equipment, dining room equipment and supplies, and tableware and serviceware. Total assets are determined by adding the current and fixed assets.

***Liabilities*** refer to the items which represent a cost to the foodservice operation. Liabilities and owner's equity make up the second section of the balance sheet. Owner's ***equity*** refers to the value of the owner's investment in the business. It is also called ***capital*** or ***net worth***. Liabilities include payroll, employee taxes, installment or bank loan notes owed by the foodservice operation, and ***accounts payable***. Accounts payable refers to money owed to suppliers or other creditors. When total liabilities and owner's equity are compared to the total assets, the foodservice manager hopes to have a positive balance. This means that the total assets are greater than the total liabili-

Maritown Restaurant
Profit and Loss Statement
March 31, 2003

| | | | |
|---|---|---|---|
| Total Sales: | | $750,000 | 100% |
| Food Cost: | | | |
| Inventory at Beginning of the Year | $ 75,000 | | |
| Food Purchases During the Year | + 225,000 | | |
| Total | 300,000 | | |
| Less: Final Inventory | 50,000 | | |
| Cost of Food Sold | | - 250,000 | 33.3% |
| Gross Profit | | $500,000 | 66.7% |
| Expenses: | | | |
| Salaries | 250,000 | | 30.0% |
| Other Expenses | +150,000 | | 20.0% |
| Total Operating Expenses | | - 375,000 | 50.0% |
| Net Profit | | $125,000 | 16.6% |

*Table 37.3*

ties. If the balance sheet shows a negative balance, the foodservice manager needs to take immediate steps to correct the imbalance and improve the financial status of the operation.

## Profit and Loss Statement

The second major financial record used by foodservice operations is the profit and loss statement, a summary of the foodservice operation's business transactions during an accounting period. An example of a profit-loss statement is shown in the Table 37.3.

The profit and loss statement analyzes the financial status of the foodservice operation by comparing the cost of food purchased, cost of food sold, and operating expenses against total sales for the foodservice operation. This is also referred to as determining the gross profit and net profit for the operation. The ***gross profit*** is the money left after the cost of the food sold is subtracted from the total sales. ***Net profit*** is the money left after salaries and other operating expenses, such as overhead, are subtracted from the gross profit. As with the balance sheet, foodservice managers strive to have positive balances on the profit and loss statement.

## Break-even Analysis

Foodservice managers often conduct a ***break-even analysis*** to determine where income and expenses are equal. To do this type of financial analysis, variable and fixed costs must be figured.

Variable costs include all changeable costs, usually expenses that change as sales change. If more food is served, food and serving expenses are higher. If less food is served, food and serving expenses decrease. Variable costs include paper supplies, laundry, part-time employees, and tableware replacement.

Fixed costs are expenses that remain stable over time and are unaffected by the rise and fall in sales. Fixed costs include occupational and primary expenses. Occupational expenses are expenses which must be paid for the right to operate the foodservice establishment. These expenses include property tax, insurance, interest or mortgage and depreciation on equipment, furniture, and the building. ***Depreciation*** is the amount something decreases in value over a specified time period. ***Primary expenses*** are those which occur only when the foodservice operation is open, but are not affected by the number of customers served. Primary expenses include utilities, the employees necessary to open the foodservice operation (basic staff), telephone costs, repairs and maintenance of the building and equipment, local and state licenses to serve food and beverages, and insect and rodent extermination.

To figure the break-even point, the figures should be converted to percentages. This makes it easier for the foodservice manager to see the relationship between sales and expenses. To illustrate, assume that Maritown Restaurant had the following sales and variable costs:

| | |
|---|---|
| Total Sales | $40,000 |
| Variable Costs | $16,000 |

Total sales always equal 100 percent. The percentage of variable costs is determined by dividing variable costs by total sales and multiplying by 100.

$$\frac{\$\ 16,000}{\$\ 40,000} \times 100 = 40\%$$

To find the break-even point, the gross profit percentage must first be identified. This is done as follows:

| | | |
|---|---|---|
| Total sales | $40,000 | 100% |
| Less: Variable costs | -$16,000 | -40% |
| Gross Profit | $24,000 | 60% |

The break-even point is found by dividing the dollar amount for gross profit by the gross profit percent.

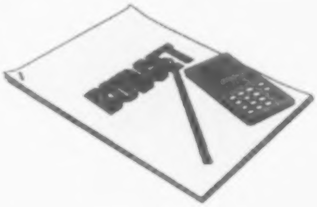
$$\frac{\$24,000}{.6} = \$40,000$$

The resulting figure, $40,000, is the break-even point. This means that sales for Maritown Restaurant must not go below $40,000 for the foodservice operation to break even. If sales are above $40,000, then the foodservice operation realizes a profit. If sales go below $40,000, the foodservice operation realizes a loss.

In summary, the break-even point tells the foodservice manager exactly how much food must be sold in order to cover expenses or break-even. Food sales that exceed the break-even point result in a profit for the business.

## Budgeting

A ***budget*** is defined as an operating plan for a business. Budgeting includes planning, preparation, controlling, reporting and evaluating. Specific steps in budgeting include the following:



- Sales or revenue portion which evaluates past performance in order to predict expected revenues.
- Expenditures are budgeted-includes food, labor, and other operational expenses.
- Estimate the labor budget-includes increments in salaries, wages, and payroll taxes.
- Develop a cash budget- a detailed estimate of anticipated cash receipts and disbursements within a budget period.
- Develop a capital expenditure budget-accounts for anticipated improvements, expansions and replacements in building, equipment, and land.
- Compile a forecast income statement (pro forma statement)- a composite of the sales and expenditure budgets which includes a projection of profit.

These are considered basic steps in the budgeting process. The actual process and how involved each foodservice manager becomes will depend on the individual foodservice organization.

## Employee Records

While not considered financial statements, accurate employee records must be kept for tax and insurance purposes. Employee records, such as time schedules, time cards or records, and social security, influence the foodservice operation's cost controls.

***Employee schedules*** aid in the distribution of labor during peak production and service times and help ensure the employee of being scheduled for work in a fair and equitable manner. These may also be known as work schedules and are usually planned by the foodservice manager one month in advance. The foodservice manager should try to rotate weekends and holidays fairly among employees as well as giving employees their choice of when to take time for vacations. Employee schedules, when balanced against the food production schedules, alert the foodservice manager to the status of the operation's staffing.

***Time cards*** or ***time records*** are the records kept by management of the number of hours worked by each employee as well as the number of hours or days of sick leave and of vacation time taken by the employee. Time cards may be kept by the employee punching in and out of work through a time clock. The time clock records the time the worker started (in) and the time the worker stopped (out). Total hours are then figured for the pay period and multiplied by the employee's hourly wage. The simplest means of maintaining employee time cards is by having the employee sign in and out of work each day on a time schedule form. The method used to log employee hours worked will depend on the foodservice operation, the philosophy of the manager, and company policy.

## Employee Related Taxes

Employers are required by law to maintain accurate payroll records. These records must include the total earnings of each employee, the amount of tips reported by each employee, the amount of withholding tax kept out of each employee's paycheck, the amount of social security taxes withheld, and other deductions, such as unemployment and disability insurance.

Withholding taxes and social security taxes must be deducted from each employee's paycheck. The amount to deduct is listed in special charts provided by the federal government. When the employer sends withholding and social security taxes to the government, it is credited to the employee by using the employee's social security number. At the end of the year, the employer sends each employee a W-2 form, a statement of wages paid and taxes withheld. Three copies of the form, to be used in paying income taxes, are sent to each employee. These copies must be provided to the employee on or before January 31 of each year.

Federal income taxes must be withheld from employee's wages. In addition, many states have state income taxes which must be withheld. Some cities also have city income taxes, which when withheld from the employees wages, help support the city government. Foodservice managers should check with local employment commissions concerning local employment tax regulations.

## Other Taxes or Fees

Several other taxes and fees must be collected or paid by foodservice establishments. These include sales tax, operator's licenses, and real estate and property taxes.

**Sales Taxes.** Most states have a sales tax, a certain percentage of the purchase amount. The sales tax is added to the amount of the purchase made within that state. Some city governments also impose a city sales tax on purchases. The foodservice manager must keep records of the taxes collected for state and city governments and provide receipts of these to the proper government agency. City and state taxes are usually paid quarterly. In some states certain types of food sales are exempt from sales taxes.

**Operator's Licenses.** Most states and cities require foodservice operations to obtain and maintain a valid operator's license to serve food and beverages to the public. Because of the variations which exist from state to state and city to city, it is wise to check with the local municipality for laws regarding licenses.

**Real Estate or Property Taxes.** ***Real estate taxes*** are assessed to provide revenue for local services, such as schools, fire and police services, and local governments. Revenue from real estate taxes may also be used for city projects like street and sewer maintenance or building or maintaining parks.

The tax levied is based on the revenue needed by the local government to provide the services desired. Real estate taxes are usually a percentage of every $100 or $1000 of the assessed value of the property. The assessed value will vary from a small percentage to the full market value of the property, depending on the area. For example, the Maritown Restaurant is worth $225,000. This is the full market value of the property. Appraisals are made only on the property and the building, not the contents of the building.

If the assessed value of the Maritown Restaurant is 40 percent of the market value, the foodservice manager pays real estate taxes figured on $90,000. The ***tax rate*** is the formula used to determine the amount of taxes owed on property. If the tax rate for the Maritown Restaurant is $32 per $1000 of assessed value, the real estate taxes to be paid are $2,880.

$$\frac{\$90{,}000}{\$\ 1{,}000} = 90 \times \$32 = \$2{,}880$$

**Tax Records.** The profit or net income of a foodservice operation is the amount of money taken in above expenses before taxes. Taxes often represent a substantial portion of the foodservice operation's expenses. In most cases, it is a good practice for the foodservice manager to engage the services of a licensed CPA (certified public accountant) to assist in keeping accurate financial records. In summary, the local, state, and federal taxes most often paid by foodservice are as follows:

Federal
Employee Federal Withholding Tax
Income Tax
Social Security

State
Employee State Withholding Tax
Income Tax (not in Texas)
Sales Tax (not in all states)
Various Licenses

Local
Employee City Withholding Tax
(not in all cities)
City Income Tax (not in Texas)
Sales Tax (not in all cities)
Real Estate Property Tax
Occupational Tax
Various Licenses

◆ **Essential Questions:** ◆

**The Financial Aspects of Foodservice Operations**

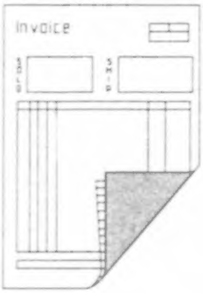
1. What are three possible causes of low income in a foodservice establishment?
2. What financial statement shows the net worth of a business operation?
3. How can a foodservice manager calculate the break-even point? Explain the process.
4. What federal, state, and local taxes are often paid by foodservice establishments? List three for each category.

## COMPUTERS IN FOODSERVICE

Since 1965, computers have made significant improvements in the business community, including foodservice. Because of the many uses of computers in foodservice, foodservice managers should be aware of the ways in which computers are used in foodservice, how computers can make foodservice operations more efficient, and what guidelines to follow in selecting computer systems.

Computers have ushered in a new era in retailing. Customer services have increased and costs have lowered through the use of computers. Business applications for computers in foodservice include the following:

- accounting
- billing
- delivery scheduling
- dietary analysis and recordkeeping
- diet preparation
- economic forecasting
- education



- inventory control
- invoicing
- labor costs & performance
- managing employee schedules
- menu planning
- order processing
- payroll management
- purchasing
- sales analysis
- word processing

### Computer Applications

Computer equipment consists of two major components: the first is ***hardware***, the computer, printer, monitor, keyboard, or other nuts and bolts type of equipment; the second component, ***software***, or ***computer applications*** for business functions, refers to sets of instructions which enable the computer to work or process information.

Computer applications or programs for foodservice are varied and usually represent substantial savings of time and money to the foodservice manager. One of the most common uses of computers in business, including foodservice, is the logging of employee hours and benefits and the preparation of the payroll, including the writing of the checks.

Computerized cash registers are the most common use of computers in foodservice. These machines serve many purposes. Computerized cash registers can keep track of the number of times a menu item is ordered each day, calculate each customer's ticket, tally the daily income, and figure the amount of sales tax collected. If the foodservice operation is part of a larger chain or group of foodservice operations, each facility's cash register can be tied to, or networked to, a central computer. By doing this, regional business managers are able to compare each operation's business transactions within a matter of hours.

While individual software packages can be purchased for the financial management of foodservice operations, complete software packages can be purchased which can totally computerize the financial management of foodservice operations.

The larger, complete systems are most often integrated programs. An ***integrated software program*** includes business applications which can be used separately as well as an internal system which allows the computer user to link the applications together. This allows the user to draw information from one application to be used in another or switch between applications in a less time consuming manner.

In foodservice, as well as other industries, integrated software packages exist for various accounting purposes. These purposes include payroll, accounts payable, purchasing, inventory, accounts receivable, orders processing, and a general ledger. The complexity of the computer system and the program will vary, depending on the needs of the foodservice operation.

Food industry software is constantly being upgraded and improved to match the needs of the foodservice industry. Integrated accounting applications can greatly increase the efficiency of foodservice operation, reduce errors in inventory and financial management, and provide readily available data for use in the forecasting of future revenues.

Many of the newer foodservice applications include programs which assist in preparing menus, track how often certain food items have been served, and the popularity of each. Integrated with this is a recipe planning application. For some programs, data bases within the program may store up to several hundred, recipes in various categories, such as entrees, appetizers, and desserts. Usually, foodservice managers add their own recipes to this data base. To facilitate the usability of the recipe planning function, these programs offer the option of printing copies of recipes for use by food production personnel. Inventory control and purchasing has greatly improved with the use of computers.

Hospital foodservice operations often select computer applications that provide a tracking system of patients and their individual dietary needs. Specialized computer programs are available which, when the patient's food intake is entered into the computer, analyze the diet for specific nutrients. Similar to menu planning in restaurants, computer programs are available for the menu planning of special diets, such as diabetic and low-fat diets. Some programs can provide the patient with a month's worth of menus, recipes, daily menu notes, and a shopping list. Frequently, computers are used in hospitals and clinics for patient education in nutrition.

E-commerce has changed the way purchasing and many other tasks are accomplished in foodservice operations. ***E-commerce*** is an abbreviation for electronic commerce and refers to the business of buying and selling goods and services on the

Internet, including the World Wide Web and electronic mail (E-mail). Foodservice operations can use these electronic tools to perform many business and management tasks. Due to its speed and efficiency, it is expected that the use of electronic communication tools will continue to affect the way in which the world of business operates in the future.

◆ **Essential Questions:** ◆
**Computers in Foodservice**

1. What is the most common use of computers in foodservice?
2. What are eight business applications for computers in foodservice?

## SELECTING A COMPUTER SYSTEM FOR FOODSERVICE

Computer software, particularly those produced for business, are seldom inexpensive. As the program becomes capable of doing more, it becomes more expensive. With the wide variety of hardware and software available, foodservice managers must be able to determine the computer needs of the foodservice operation as accurately as possible. Some general guidelines to follow when selecting computer hardware and software for foodservice operations are listed below:

- Clearly define the needs of the foodservice operation.
- Project the future needs of the foodservice operation.
- List in priority the needs of the foodservice operation.
- Specify how much money the foodservice operation can afford to spend on computer equipment and software.
- Talk with other foodservice managers about their computers and the applications they have used or examined.
- Keep a file of the comments of other foodservice managers, reviews from computer magazines, reviews from industry journals, and your evaluations.
- Talk with local computer dealers.
- Contact hardware and software dealers directly, using computer magazines to locate addresses.
- Evaluate the operator's manual, or documentation, for the software to see how easy the software may be to use and how well it meets the needs of the foodservice operation.
- See the software demonstrated and use it before buying.
- Check to see how much follow-up support is available for problems and answers to questions after the purchase.

Selected wisely, computers and computer software can help foodservice operations in becoming more effective, efficient, and financially sound.

◆ **Essential Questions:** ◆
**Selecting a Computer System for Foodservice**

1. How would you summarize the guidelines for selecting computer hardware and software for foodservice operations?
2. How will computers be used in foodservice operations of the future? Explain your predictions.

## Chapter Highlights

- Accounting and recordkeeping include budgeting, cost control, and money handling.
- The balance sheet and the profit and loss statement are the most common financial records used in foodservice.
- The assets of the operation are the things owned or in possession of the foodservice operation that have monetary value, such as cash, inventory, and money owed to the foodservice organization.
- The profit and loss statement is a summary of the foodservice operation's business transactions during an accounting period.
- Break-even analysis determines where income and expenses are equal.
- A budget is the operating plan for a business.
- Computer applications for foodservice include payroll, accounts payable, accounts receivable, order processing, purchasing, inventory, general ledger, menu preparation, dietary analysis, and patient nutrition education in hospital or clinic settings.
- Computerized cash registers are the most common form of computers used in foodservice establishments. They can be used to total the customer's check, keep count of the number of times each menu item is ordered for the day, total the day's sales, and figure the total day's sales taxes collected.

# Chapter 38

# Human Resources and Productivity

## Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

2A Identify policies related to wages, benefits, and performance of employees.
3C Explain management functions in food production and service operations.
3F Analyze issues affecting management of human resources.
7G Use appropriate terminology related to the food production and service industry.
12B Demonstrate effective methods to secure, maintain, and terminate employment.

## Chapter Vocabulary

exit interview
firing
horizontal promotions
human resource management (HRM)
job analysis
job description
labor cost budget
layoffs
production schedule
skill inventories
staffing tables
task analysis
transfer
vertical promotions
voluntary separation

One of the most important elements in a successful foodservice operation is the staff. Considerable time and effort is required to recruit, hire, and train qualified foodservice workers. Once employed, these workers are key to carrying out various cost controls, maintaining quality control, and developing and maintaining good customer relationships.

## HUMAN RESOURCES

The process of hiring and training staff is known as ***human resource management (HRM)***. Personnel management includes organizing staff assignments, delegating responsibilities, motivating employees, communicating with employees, enforcing rules, disciplining employees, monitoring employee absences, and discharging employees when necessary. Good employees are essential for achieving the organizational goals of a foodservice operation.

## Recruiting

As new foodservice employees are needed, they are usually recruited through newspaper advertisements or by word-of-mouth through foodservice employees currently on staff. As the training level for the position increases, the foodservice manager advertises the position in trade journals and through local culinary or hospitality programs at colleges and universities. Many times, people will voluntarily come into the foodservice facility and ask to complete an application for employment. "Walk-ins" such as these often represent good sources of future employees and should be carefully considered.

It is wise not to rely on "word of mouth" job advertising. This type of recruiting results in the formation of friendship cliques among workers and can disrupt the foodservice operation. Having a group of close friend's work at the same foodservice operation often causes productivity problems. Employees visit instead of working.

## Hiring

Foodservice managers face the challenge of keeping good foodservice workers employed at their facilities. Good foodservice workers are either skilled at the time they are hired or must spend a period of time learning their new job. In order to retain well-trained employees, managers are challenged with maintaining employee satisfaction through practices such as those listed below:

- Promoting pleasant, fair, and respectful working relationships among employees.
- Encouraging open communication between managers and employees.
- Creating favorable working conditions.
- Developing attractive wage and benefit packages.

To operate effectively, the foodservice manager must hire employees who have or can develop the needed skills. Competitive wages and benefits must be offered to attract qualified people. Prospective employees must be carefully screened with reference checks conducted to reduce the chances of hiring undesirable employees.

When interviewing a prospective employee, foodservice managers should strive to be unbiased. Records of all interviews should be kept whether or not applicants are hired. A structured interview in which questions are planned in advance is becoming more common to help promote equity instead of using the more informal unstructured interview.

The decision to hire an applicant is usually based on the applicant's previous experience, personality, personal hygiene, and the interviewer's perception of the applicant's ability to perform the tasks required of the job.

Within reason, foodservice managers should try to match the applicant with the job(s) available. The employee's needs and aspirations should be considered when hiring and in determining the work load that will be assigned. If worker's believe they are not adequately compensated for their work, they may develop a negative attitude and fail to put forth a productive work effort.

Most jobs in foodservice are both physically and mentally demanding. Finding ways to improve working conditions can be both challenging and rewarding to foodservice managers. While managers may not be able to eliminate the need for workers on holidays and weekends, these situations often meet the needs of employees who, for personal reasons, need to, or prefer to work on those days.

***Staffing tables*** outline the number and types of workers needed. In foodservice, a certain number of workers are necessary to meet a potential customer load. If the customers do not actually come in, the staffing table should be adjusted for a more realistic customer load in the future. Factors which help determine the staff necessary to serve potential customers include the following:

- hours of operation
- menu offered
- type of meal service
- federal regulations
- union contracts

Refer to Figure 38.1 for a diagram of staffing.

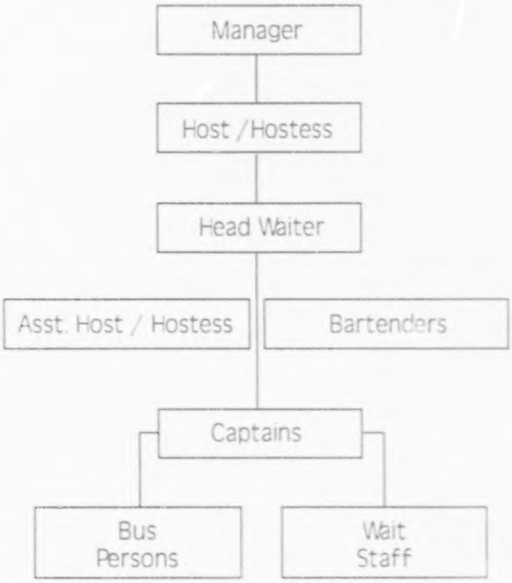


***Figure 38.1***

***Skill inventories*** are used in conjunction with staffing tables and supply information on individual employee's education and skills. The skill test measures actual skill and aptitude to perform a certain job task.

Job descriptions are important in developing an effective hiring process. The ***job description*** is a detailed description of the job, its responsibilities, and its requirements. Well-written job descriptions enable foodservice managers to hire staff more effectively and realistically. Also, prospective employees have a better understanding of what is expected of them. This may increase employee job satisfaction and reduce employee turnover.

When writing job descriptions, foodservice managers should consider future changes which affect each position. Factors, such as the purchase of new equipment, menu changes, variations in customer tastes and patronage, and more effective production techniques, may significantly alter an employee's job description. Because of this, foodservice managers should periodically review job descriptions to ensure that they reflect the true nature of the position. Well-written job descriptions can help determine acceptable salaries, simplify job tasks, and lessen confusion about the expectations of the job.

## Orientation

New employees should be trained carefully. To help new workers get started, an orientation should be provided. The following topics are covered during employee orientation:

- *The operation.* Explain the operation of the facility and the contribution the workers will make.
- *Benefits.* Inform the workers about benefits, such as vacation, sick leave, meals, and insurance.
- *Worker relations.* Introduce the new workers to co-workers and their supervisor.
- *Layout of facility.* Provide a tour of the facility pointing out restrooms, lockers, and where the employees will work.
- *Policies and procedures.* Explain routines, rules, and safety and sanitation regulations. Provide a copy of these for each employee's

reference. This information may be in the form of a Policy and Procedures Manual.

- *Responsibilities.* Explain specifics about job duties that are expected of the position each employee will fill. Show the workers where to obtain the food, supplies, tools, and equipment needed; how to perform each task; and what to do with finished products and waste.
- *Progress.* Check each new employee's work periodically. If problems occur, additional training and assistance should be provided.

A skilled or previously trained worker may need a less thorough orientation than an unskilled worker. In any event, it is important that an orientation be conducted with each new employee. Orientation serves to welcome the new employee, helps put them at ease, and provides them the opportunity to ask questions and clarify any points on policies, procedures, or tasks related to the job.

### *Training*

Training is necessary for new workers. Additional training is necessary when procedures change, new equipment is purchased, or new facilities are opened. The purpose of retraining in these situations is to change the way a worker carries out a procedure. To be effective, the worker must see the need for the change and want to contribute. To benefit from the training program, follow the training tips below:

**TRAINING TIPS**

- ✓ Let the employee help set goals.
- ✓ Try to teach a complete task in one session.
- ✓ Teach tasks in the order in which they are performed.
- ✓ Encourage questions.
- ✓ Stress the positive and pleasant aspects using praise and ego-building techniques.
- ✓ Stress key points and reasons for each step.
- ✓ Keep training sessions short (15-20 minutes).
- ✓ Allow time for practice.

**◆ *Essential Questions:* ◆**
**Human Resources**

1. What are some challenges that foodservice managers face in finding and retaining quality foodservice employees?
2. Why is it important to match job applicants with the jobs available?
3. What is the purpose of training?

## WORKING WITH FOODSERVICE EMPLOYEES

### *Scheduling*

Once staff has been hired and adequately trained, the next step is to schedule personnel to fit the work load. Production requirements vary from meal to meal, day to day, and week to week throughout the year. Because of these variations in meal production, foodservice managers must develop ways to predict patterns of meal production for given periods of time. Once foodservice managers know approximately what the food production requirements are, staff may be scheduled. Several techniques may be utilized in production scheduling.

**Split-shift scheduling.** Workers not needed in "down" time are released between busy meal times. Employees may work lunch rush, clean and set for dinner, and then leave. They will return an hour before the dinner rush. This type of scheduling is often used for servers in restaurants.

**Irregular scheduling.** Starting times vary from one worker to another and from day to day. This scheduling technique increases efficiency and avoids having all the workers tired at the same time. Fresh, rested employees relieve the tired servers so that the quality of service never suffers. Schedules are posted at the beginning of each pay period and vary greatly from one week to the next.

**Part-time employees.** Part-time workers are often used to increase the staff during peak workloads. Additional personnel are often needed for large catered functions. Often caterers and foodservice managers use contract labor for heavy labor-intense weekends and holidays. The advantage of using contracted labor is that the manager is not responsible for providing benefits like insurance. However, the disadvantage is that the contracted employees may not have adequate training in foodservice operations.

**Use of staffing tables.** As previously discussed, these tables aid in scheduling workers by predicting the number of guests expected each day for each meal. Most foodservice managers develop staffing tables that fit the particular needs of the operation. Below are some staffing guidelines that are typical of the foodservice industry.

**Staffing Guidelines and Ratios**

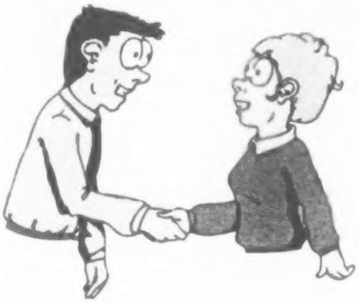
| | | |
|---|---|---|
| Reception | 1 server | per 50 guests |
| Buffet meal | 1 server | per 32 guests |
| Served meal | 1 server | per 24 guests |

**Labor cost budgets.** Some budgets aid in scheduling by allotting a given amount of money for a given volume of sales. Budgets are based on past labor and sales figures. The scheduling of employees depends greatly upon the ***labor cost budget*** of the foodservice facility.

Caterers often prepare detailed employee and production schedules for each function. These procedures are necessary to ensure the success of the function and to control labor costs.

## Promotions

When job descriptions are developed, lines of promotion should be identified, generally from jobs of lesser responsibility to those of greater responsibility. The decision to promote an employee should be made based on the employee's ability to complete current job tasks, the scope of the tasks involved in the new job, and the employee's ability or willingness to learn the tasks of the new job. Employees should be made aware of promotion opportunities and be offered horizontal promotions as well as vertical promotions. ***Horizontal promotions*** are promotions to jobs that have different duties at the same levels of responsibility as the job the employee currently holds. ***Vertical promotions*** are promotions to jobs that have different duties and greater levels of responsibilities than the job the applicant currently holds. Horizontal promotions may also involve the ***transfer*** of the employee from one department or division of the foodservice operation to another department or division.



## Separations

There are three types of job separations:

- ***Firing*** - when an employee is permanently released from job duties because of a violation of rules, regulations, theft, or other such action. Firing is a management decision.
- ***Layoffs*** - when, due to economic conditions, employees are released from their job duties for a specific or indefinite period of time. Most often, layoffs occur when the business can no longer afford to keep the employee on the payroll, but wants to retain the option of putting the employee

back to work in the future. Layoffs are a management decision.

- ***Voluntary separation*** or voluntary quitting-when the employee decides to no longer work for the company, for whatever reason.

Depending on the circumstances surrounding the separation, employees may be entitled to various types of benefits. Unemployment benefits may be drawn by an employee who has been fired or laid off. If the employee is a member of a union, the employee may also be eligible for union benefits.

Regardless of the reason for the separation, each employee should be given an ***exit interview***. An exit interview provides the employee the opportunity to share with the foodservice manager information concerning the job, working conditions, and any problems encountered by the employee. The foodservice manager should take advantage of the information shared by the employee. Exit interviews may reveal major flaws in the operation. The alert manager will examine this information and work to take corrective actions where appropriate and feasible.

### Employee Work Schedules and Assignments

If a foodservice operation has major staffing problems that remain unresolved, the operation may suffer financial losses. In addition, employees will become exhausted, both physically and mentally. While a certain amount of peak production rush is expected, the majority of the foodservice employee scheduling should facilitate the maximum use of materials and human energies.

When developing work schedules, foodservice managers must be aware of the following factors which may influence the scheduling of employees:

- peak production and service periods
- hours of operation
- layout of the facility; production and service facilities
- current labor costs of facility
- needs of employees in terms of student schedules, vacation, and sick leave time requested

**◆ *Essential Questions:* ◆**
***Working with Foodservice Employees***

1. What techniques can managers use in production scheduling?
2. What responsibilities do foodservice managers have regarding firing or layoff of employees?
3. How can promotions be used effectively to help retain experienced employees?

## CONTROLLING LABOR COSTS

Labor costs have become an increasingly important part of the foodservice operation. In many instances, labor costs are greater than food costs. Labor costs include all expenses related to employment of a worker. These expenses include administrative expenses, salaries and wages, vacation and holiday pay, employees' meals, social security taxes, workman's compensation insurance, and health and life insurance. These expenses must be totaled to find actual labor costs.

### Labor Costs Comparison Methods

- ***Profit and loss statement.*** Labor costs are divided by total sales to find the labor cost percentage.
- ***Comparisons between operations.*** Costs of several establishments in a chain are compared to show differences in labor cost percentage and labor cost per meal.
- ***Person-hour comparison.*** The total hours worked by all employees for one period can be compared with another period. This provides a useful means of comparison even when wages have changed.
- ***Person-hours per 100 meals served.*** The total hours worked by all employees is figured for every 100 meals served.
- ***Sales per person-hour***. The income from sales is divided by the number of hours worked by employees for that period.
- ***Hourly sales and person-hours.*** A graph or chart is used to show sales and number of customers, gross profit, labor cost, and labor cost percentage for each hour. The information is used to determine the best opening and closing hours and to schedule workers during peak and slow periods.

*Table 38.1*

Cost comparisons are a useful means of checking actual labor costs. Refer to Table 38.1 for examples of labor cost comparison methods.

Foodservice managers may be able to reduce labor costs by using one or more of the following techniques:

- Use machinery to replace or assist workers.
- Rearrange equipment, kitchen, and service areas to save production steps.
- Use work simplification procedures in all tasks.
- Reschedule workers to meet demands at peak and slow periods.
- Encourage employees to help find ways to save time and energy, and to practice teamwork.

While basic work simplification techniques can help control labor costs, two items are frequently used to significantly reduce labor costs. These are the job description and the production schedule.

## Job Descriptions

Job descriptions have been discussed in relation to their effectiveness in the hiring process. A job description is a detailed description of the job, the job responsibilities, and the job requirements.

Before the job description can be written, a job analysis and a task analysis must be developed. A ***job analysis*** identifies the tasks performed by each worker. A ***task analysis*** identifies the steps in performing each task. Questionnaires, interviews, and observations are used to gather this information for use in writing the job description. Table 38.2 shows an example of a job analysis and a job task for a receiving clerk.

Through the process of job and task analysis, foodservice managers can identify essential tasks necessary for efficient foodservice operations. Foodservice managers may decide to eliminate or reassign certain tasks or identify tasks that may be best done through other methods (such as equipment utilization or use of convenience and specialty foods). By clearly defining the job through job

***Example of a Job Analysis and Task Analysis***

JOB analysis

Receiving Clerk
1. Check incoming deliveries for quantity and weight.
2. Inspect for quality.
3. Record deliveries in a daily report or log.
4. Deliver merchandise to its proper place for storage or use.
5. Store food.
6. Order needed staple items.
7. Take weekly inventory and extend $ amounts.

TASK analysis: Receiving Clerk

Task # 1 from above:
1. Check incoming deliveries for quantity and weight.
    - (a) Be ready for the delivery.
    - (b) Check the merchandise carefully.
    - (c) Weigh each item separately.
    - (d) Tag and date meats on delivery.
    - (e) Check for quality.
    - (f) Store according to diagram.

*Table 38.2*

analysis and task analysis, foodservice managers increase the likelihood of employee satisfaction and achieve good job and employee match.

## Production Schedule

A ***production schedule*** provides a record of the foods prepared for a meal. Before the meal is prepared, management uses past records to decide how many servings of each menu item to prepare. Recipes are prepared in amounts to yield the number of servings estimated. Any variation in the yield is also recorded, as are the number of customers served, and the amount left over. This record aids the manager in planning use of leftovers and the number of servings to prepare for the next meal. Refer to Table 38.3 for a sample production schedule.

Production schedules are used by foodservice managers to determine the best utilization of available labor. They also help determine what items may be more popular and profitable for the foodservice operation.

**◆ Essential Questions: ◆**
**Controlling Labor Costs**

1. What expenses should be included in labor costs?
2. What is the difference between a job analysis and a task analysis?

**Sample Production Schedule**

**Production Schedule**

Station ______________________

Workers ______________________

______________________

______________________

Manager ______________________

______________________

| Number of Servings Prepared | Menu Item | Expected Yield | Actual Yield | Number Served | Amount Left Over |
|---|---|---|---|---|---|
| 50 | Meat loaf | 50 | 47 | 35 | 12 |
| 50 | Fried fish | 50 | 51 | 48 | 3 |

*Table 38.3*

## PRODUCTION AND QUALITY CONTROL

Production and quality controls are usually considered together as a single working unit. Methods of production affect quality, and the quality desired influence the method of production used. Foodservice managers are aware of the relationships between these two foodservice control processes and the benefits derived from each.

### Production Control

The production of menu items should be carefully planned. Past sales are the best indicators of the quantities needed. If too much food is prepared, waste and loss may result. Working leftovers into the next meal is often difficult. Leftovers reduce profits because they require extra handling. If too little food is prepared or serving problems and delays occur, customers may become unhappy.

Portion control is influenced by, and influences, the menu in three ways:

- the form in which the food is purchased (prepared or portioned)
- the volume of food purchased
- the container size in which foods are purchased

Some portion control is maintained during food preparation when ingredients are weighed and measured. Standardized recipes identify expected yield and may require that the food be divided into portions during preparation. However, most portioning is done during serving. If portions served are too large, food costs increase and profits shrink; if portions are too small, customers may feel cheated, become dissatisfied, and not return to the foodservice operation. Portioning tools should be specified for each menu item served. Tools commonly used for maintaining portion control are portion scales, scoops, ladles, and markers.

## Quality Control

Because customer satisfaction is essential, food quality and service cannot be overemphasized. Food quality must be monitored at purchasing time, while in storage, during preparation, and while being held at serving temperatures. Poor quality, at any point, will reduce customer satisfaction.

The cost of high quality foods may require foodservice facilities to pay higher prices than normally anticipated. In addition, food costs are affected by the following items:

- the type of ingredients used in a recipe
- skill level of employees preparing the item
- type of recipe used (standardized or other)
- quality of production control
- accurate portion control
- quality of holding service
- proper control of the use of leftovers
- procedures for the transportation of foods, especially in catering operations

## Benefits of Production and Quality Controls

Production and quality controls are important to successful foodservice operations. Some of the benefits derived from effective production and quality controls are discussed below.

**Increased customer satisfaction.** When customers perceive that they are consistently getting good quality foods at reasonable prices and in portion sizes which are reflective of the restaurant and the prices charged, they will return often. This repeat business or "customer loyalty" helps the foodservice operation become financially successful.

**Good public relations.** Satisfied customers will convey their satisfaction to friends and family. "Word-of-mouth" advertising helps increase business and profits and is often the best type of advertising for the growth, reputation, and success of any foodservice establishment.

**Establishment of standards.** When production and quality controls are developed, they serve as standards by which food products are judged. If a product does not meet established standards, foodservice managers may take steps to correct the problem.

**Support for other cost control systems.** No cost control technique stands alone. Labor, food, and production cost controls are all interrelated. A weak link in one control mechanism will affect other control systems. Information derived from one control system may be necessary for the effective operation of another control system. Therefore, it is to the foodservice manager's advantage to develop and monitor each cost control system separately and as a unit.

**Establishment of high production and quality levels for employees to model.** When clearly defined, production and quality controls help direct employee actions and strengthen their sense of responsibility for maintaining the quality of foods served.

### ◆ Essential Questions: ◆
### Production and Quality Control

1. What items should be included in a production schedule?
2. At what stages of a foodservice operation are portions controlled?
3. What are the benefits of production and quality controls?

## Chapter Highlights

☆ Human resource management (HRM) is the process of hiring and training staff.

☆ HRM includes organizing personnel, delegating responsibilities, motivating employees, communicating with employees, and disciplining employees, if necessary.

☆ Competitive wages and benefits and careful screening help reduce the chances of hiring undesirable employees.

☆ Training must be provided to new workers as well as to all other workers when procedures change, when new equipment is purchased, or when facilities are opened.

☆ Lines of promotion should be identified when job descriptions are developed, generally from jobs of lesser responsibility to those of greater responsibility.

☆ Factors which influence employee scheduling include the hours of operation, peak production and service periods, facility layout, current labor costs, and employee needs.

☆ Each employee should be given an exit interview. This provides the employee the opportunity to share with the foodservice manager information related to problems encountered by the employee.

☆ Job analysis and task analysis provide detailed information from which the job description is written.

☆ Many factors influence the quality of a final food product. Foodservice managers should be aware of these factors and help control them.

# Chapter 39

## Marketing

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

1B Describe market segments in the food production and service industry.

2D Analyze the relationship of multicultural awareness to target markets and customer services.

3D Explain components of a strategic business plan.

4C Explain the relationship of concept, market segment, menu, and theme in commercial foodservice.

4F Explain how the menu reflects the foodservice plan for meeting customer needs and wants.

5A Analyze various types of marketing strategies.

5C Explain the types of direct marketing materials.

5D Explain the use of special events and promotions in the food production and service industry.

7G Use appropriate terminology related to the food production and service industry.

11A Identify potential clients and their foodservice needs.

11C Analyze various companies' practices regarding customer satisfaction.

### Chapter Vocabulary

clip-ons
concept
demographic factors
in-house branding
market segments
market study
marketing
menu
outdoor advertising
point-of-purchase sales
presentation
product
promotions
psycho-graphics
publicity
restaurant branding
retail-item branding
strategic business unit (SBU)
table tents
target market
theme
truth-in-menu legislation

In today's marketplace, a foodservice operation that is financially successful is engaged in some type of marketing. Foodservice managers understand marketing strategies, how to use them effectively, and how well planned marketing programs can boost sales and promote good public relations.

***Marketing*** means presenting the product in such a manner that people buy it. In foodservice, "the product" includes the food, service, prices, and surrounding atmosphere. Marketing activities include advertising, sales promotion and presentation.

## MARKETING PROGRAMS

When developing a marketing program, the foodservice manager must study the following five factors:

- the product
- the price
- the market (promotion)
- the location (place)
- the characteristics of advertising, promotion, and public relations (which help bring the market to the product)

Only when all of these factors have been considered can the foodservice manager develop an effective and appropriate plan for merchandising the foodservice operation. Four of these factors are referred to as the four P's of the marketing mix (product, price, promotion, and place).

***Strategic business units (SBUs)*** are part of the organization's long-term plan. Each SBU is a separate section of the organization with a specific marketing focus. A manager is responsible for each SBU. SBU's are basic to the strategic marketing plan of the organization. An example of an SBU is a foodservice department within a hospital which serves the corporate level and hospital physicians. The SBU has a defined market segment with a specific strategy consistent with the mission of the organization.

### Product Study

The products offered by a foodservice operation are food, service, prices, and surroundings. Before foodservice managers can begin to develop a marketing strategy, they must know and understand the products their foodservice operations offer. Marketing involves the total foodservice operation. Foodservice managers should evaluate the following ten factors specific to their establishments:

1. *Location.* Is the location convenient with adequate parking available? Are any historical or cultural values of the building, site, or area being used to advantage?

2. *Appearance of building.* Is the building clean and attractive on the outside? Does the building have an inviting appearance?

3. *Outside sign.* Does the sign quickly identify the business? Is the sign appropriate, and does it meet local codes relating to outdoor advertising? Can the sign be seen easily?

4. *Entrance.* Is the entranceway clean and inviting? Are pleasant aromas noticed by guests upon entering the establishment?

5. *Public areas.* Are the lobby, restrooms, and dining areas attractive and comfortable? Is the decor distinctive? Is the temperature comfortable and without drafts? Is the

lighting adequate? Does light glare through the windows? Is the building unpleasantly noisy?

6. *Food.* Is the food different from similar foodservice places? Is the food consistently good? Is the food served attractively and at the proper temperature? Are the portion sizes appropriate?

7. *Service.* Is the service prompt and pleasant? Are service personnel well-groomed, competent, and friendly?

8. *Prices.* Do the prices reflect the type of foodservice offered? Are the prices appropriate to the items served? Do the customers consider the prices to be reasonable for the type of food, service, and portion sizes served?

9. *Capacity.* Is there adequate seating for customers? During "rush" periods, is there adequate seating available in a bar or lounge area? Are employees well-trained in seating guests, taking and checking reservations, and directing customers to waiting areas if seating is unavailable?

10. *Staff.* In some situations, such as in chain restaurants, foodservice managers have little power over the type of meal service, type of food served, or the decor of the foodservice operation. These decisions are made at the corporate level, however a well trained, efficient, and hospitable wait staff can help create a warm, pleasant atmosphere for customers. This type of personal selling is very important in developing an effective marketing campaign. Is the staff well-trained, efficient, and hospitable?

## Market Study

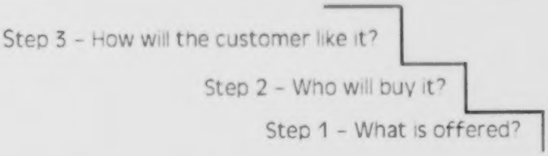
A ***market study*** finds out who is buying or might buy the product. A market study will also determine where potential customers are and what their food preferences might be. To conduct a market study, foodservice managers should progress through the following three steps:

1. *Define the type of foodservice operation.* Is the foodservice operation a fast-food franchise, a downtown lunch-only diner, a haute French cuisine restaurant, a street corner hot dog stand, a Western style steak house, or a family oriented cafeteria? Each type of foodservice operation will require somewhat different merchandising techniques to be successful. Foodservice managers must thoroughly understand the type of foodservice being offered.

2. *Identify potential customers.* The nature of the foodservice operation will help identify the people who are most likely to be potential customers. Local maps showing neighborhood shopping centers, businesses, and cultural areas are available from city administrative personnel. These should be studied to more accurately predict where potential customers may be found.

3. *Determine the characteristics of potential customers.* Information, such as sex, age, level of income, job status and careers, religion, and family size, are called ***demographic factors***. These factors more clearly describe the people who are potential customers. The closer a foodservice operation comes to meeting people's needs, the more likely the people are to becoming customers.

Market Study Steps


Step 3 – How will the customer like it?
Step 2 – Who will buy it?
Step 1 – What is offered?

Information for this phase of analyzing the market may be obtained from a variety of sources. The local Chamber of Commerce and other civic organizations can provide foodservice managers information about the diversity of people in a certain area where the food establishment is located. City officials and convention bureau representatives provide information about special events, which will bring potential customers to the area establishments. City and county agencies provide information about new industries moving to the area, which bring potential customers.

Many foodservice managers prefer to collect market information directly from people they think might be customers. For example, a small neighborhood cafe may distribute short questionnaires to local families asking what characteristics they would prefer in a family restaurant, the family size, ages of family members, income levels, and times of the week most popular for families to eat out. This type of survey can provide foodservice managers with available information directly obtained from the target market or the people foodservice managers want to have as customers.

The ***target market*** is essentially all the available and potential customers. ***Market segments*** are smaller subgroups of consumers who share common characteristics, such as needs and expectations, geographic location, age, and income levels. Figure 39.1 gives an example of target market and market segments and their relationship.

Through market segmentation, foodservice managers can identify smaller groups of people as potential customers. Specific categories include demographics (age, sex, income level); geographic (where people live); and ***human factors*** (lifestyles, attitudes, personalities). Market segment studies help set ultimate goals, which is to become essential in a certain segment of the population. Decisions are made in a foodservice operation based on a focused set of related expectations. The ***concept*** of a foodservice organization has many elements that contribute to its function as a complete and organized system serving the needs and expectations of its guests. When studying the market segments, the "theme" and "menu" of a foodservice establishment must factor into the overall marketing plan.

***Theme*** refers to the collective effect of a number of ideas that create a unique and total dining experience. Examples include ethnic cultures (i.e., Texas barbecue), music, sports, celebrities, or eras of the past (i.e., Fifties Sock Hop Diner). ***Menu*** refers to the foodservice operation's plan for meeting the needs and expectations of its guests; the product plan for a restaurant.

The customer shapes the foodservice industry. Food-service is a service industry that depends on understanding the customer's expectations. The foodservice manager has to understand the culture of the customer before he/she can meet the expectations. Much research is done to segment or divide the foodservice market. A successful foodservice manager must be aware of the cultural diversity in the market and how it can affect the foodservice operation. Factors that influence the foodservice market segments include the following:

- geographic location
- age of targeted group
- ethnicity, culture
- social class, societal issues
- price/value relationship (economics)

**Example of a Target Market and Market Segments**

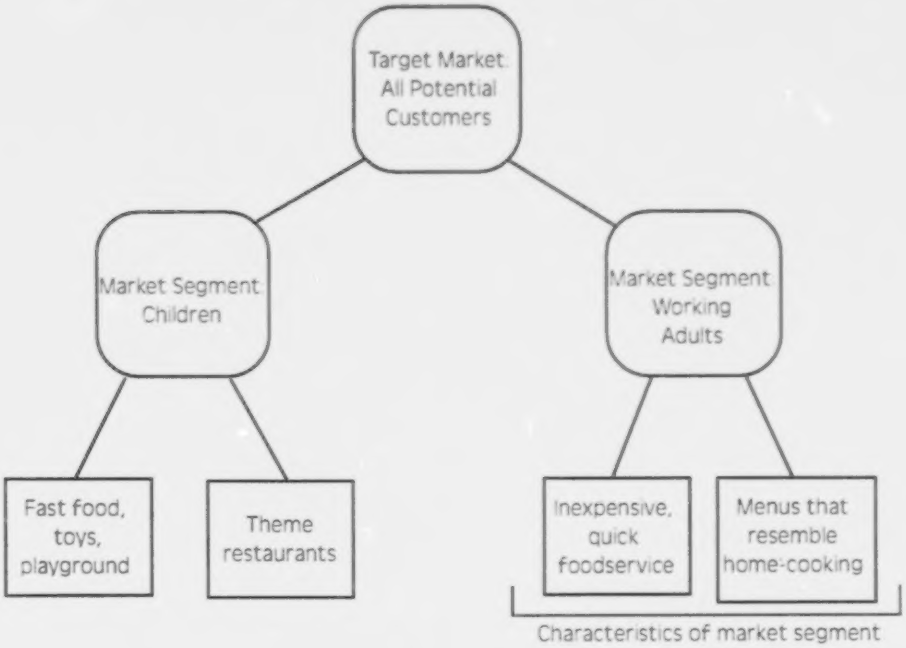

Target Market: All Potential Customers
Market Segment: Children
Market Segment: Working Adults
Fast food, toys, playground
Theme restaurants
Inexpensive, quick foodservice
Menus that resemble home-cooking
Characteristics of market segment

*Figure 39.1*

**◆ Essential Questions: ◆**
**Marketing Programs**

1. What factors should be considered when developing a marketing program?
2. What is a target market? Explain where demographic information can be obtained.

## DEVELOPING A MARKETING PLAN

Once the product has been studied and the market analyzed, the marketing plan may be developed. A marketing plan generally includes advertising, publicity, and other techniques designed to inform and attract customers to the product.

Advertising is how the business lets customers know where the foodservice operation is and what it has to offer. Advertising is communication through a paid media by an identified sponsor. There are several types of advertising that may be used. The top five forms of advertising are as follows:

- Newspapers – the leader in the number of dollars spent in advertising and the strongest form of advertising.
- Television – the second strongest form of advertising but the leader in the overall cost of advertising.
- Direct Mail – the third strongest method of advertising but is increasing in advertising power.
- Magazines – the fourth strongest means of advertising.
- Radio – the fifth strongest form of advertising.

Other types of advertising include ***outdoor advertising***, such as signs, billboards, and posters; telephone directory ads; telephone advertising; personal advertising; or promotional campaigns. The Internet is the most recent category, which allows personal one-on-one interactive marketing.

In deciding which method of advertising is the best to use, foodservice managers should consider the following process:

**1. Decide on the objectives of the advertising campaign**. The following list contains the three main purposes of advertising:

- to inform the marketplace; create primary demand for the product
- to persuade the marketplace; create a desire within the marketplace among those people who would not choose the product as their first choice
- to remind the marketplace; reinforce the ideas of consumers toward the product as being desirable

**2. Decide on the budget to be used for advertising**. Restaurants generally use between four and six percent of their total sales for advertising. Foodservice managers may decide on how much to spend on advertising in the following ways:

- Choose what is affordable.
- Use a certain percentage of sales.
- Use an amount that is comparative to the leading competitors.
- Decide on the amount of awareness among customers and determine the amount of money necessary to reach this level.

**3. Decide on the message**. Every form of advertising has its advantages and disadvantages in its effectiveness in conveying a message. To maximize advertising efforts, foodservice managers should do the following:

- Generate the message. Specifically decide on what you want to tell the consumer.
- Evaluate and select the message. In selecting the advertising message, the criteria for evaluation should include how well the message represents the product, how believable the message is, and how much the message is likely to move consumers to action.
- Determine the method of executing the message. Should the message point out the basic facts of cost and quality; can the message be effective if it has a "fantasy" theme; should the message show people, like those the foodservice operation wants to attract, enjoying the food and hospitality of the business?

**4. Decide on the type of media**. Foodservice managers must carefully consider the cost of each form of advertising, the advantages and disadvantages of each, and compare these factors against how many customers will be attracted to the business and how much income will be generated as a result of the advertising campaign. A concentrated effort in one type of advertising is very effective in some cases, but using more than one type of advertising (for example: using TV, radio, and direct mail) spreads the message to more potential customers.

*5.* **Evaluate the effectiveness of the advertising campaign.** Careful records should be kept for each form of advertising used to determine the effectiveness of the technique. While there are several methods of determining advertising effectiveness, the evaluation should include a summary of the technique used, the dates of the advertisement, the location of the advertisement, the cost of the advertisement, and any special effects used, such as full color newspaper ads. Foodservice managers should compare this information with sales records for before, during, and after each advertising campaign. Customers should be surveyed to determine if they've seen the ad, what they remember about it, and how the advertisement influenced their decision to patronize the foodservice operation.

COMPARE
YOUR PRICES

Foodservice managers use ***promotions*** periodically to attract customers. Promotions are short-term incentives to encourage the purchase of the product. In foodservice, promotions are generally related to the use of coupons or special meal combinations, such as giving away a free order of french fries with each hamburger sold. The same guidelines used to determine which advertising campaign to use are appropriate for determining which promotion campaign to develop. Sales promotions also include special celebrations, fashion shows, prizes, weekly menu specials, contests, and special limited prices.

Finally, some foodservice managers are effective in their use of publicity as a form of marketing the foodservice operation. ***Publicity*** is media attention drawn to the foodservice operation by some type of special interest project. Publicity is usually related to a community service-oriented act, such as providing free meals for the needy during Christmas. If used wisely, publicity is an excellent method of marketing the foodservice operation and developing good will for the foodservice operation. A facility that supports the community through generous acts will often be patronized by customers out of respect and support of the foodservice establishment.

An effective advertising or promotion campaign may bring customers to the foodservice operation, but the next major step is to keep them coming back. It is at this point that foodservice managers must become aware of the variables within the foodservice operation that influence the customers choice of foods and their decision to return to the restaurant.

### ◆ Essential Questions: ◆
### Developing a Marketing Plan

1. What are the forms of advertising that are most used in the foodservice industry? Which form of advertising is most expensive?
2. How can a foodservice manager decide which form of advertising is the best?

## THE MENU AS A MARKETING TOOL

When presented to the customer, the menu can be a powerful merchandising tool for the foodservice manager. Today, menus are as varied as the foodservice operations they represent, from classic continental restaurants with leather-bound menus to sidewalk cafes whose menus are written on chalkboards in brightly colored chalk. Yet each type of ***menu*** "sells" the food and the establishment.

Because the menu is a form of selling, it is important for foodservice managers to know how to construct a winning menu format. Factors to consider when planning a

menu are as follows:
- materials
- size
- color
- design
- format
- text

## Materials

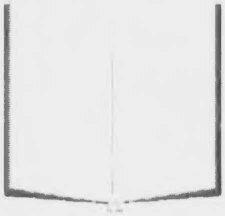
The materials selected for the menu should be strong enough to withstand repeated handling and resist staining unless the menu is designed to be low cost and considered to be disposable. If the restaurant has a menu that changes daily, a heavy-duty, longwearing cover with removable inserts may be desirable. In general, varnished covers or some plastic laminates should be avoided because of problems with these finishes cracking, giving the menu a shoddy appearance. The paper used for the menu should be a heavyweight stock that is wear resistant.

## Size

While sizes vary from operation to operation, a folding menu about 6" x 8" up to 9" x 12" when opened, or a single-sheet menu 9" x 14", are considered acceptable sizes. The menu should, when opened, be easily handled by the customer and be large enough to contain the menu items in a legible size print.

## Color and Design

The theme or decor of the foodservice operation should be carried through to the menu cover. If the locale is well-known for some reason, such as the Alamo or the Golden Gate Bridge, these themes may be used for menu covers. If the foodservice operation has a large repeat business, menu covers may be changed several times during the year to spark interest among customers. The colors selected for the menu paper stock and the printing ink must blend well with the overall decor of the foodservice operation. For best visibility, contrasting colors of paper and print make reading easier. Colors, such as drab grey or purple, should be avoided as these colors are less appealing and may diminish hunger. Be aware of the interaction of some color combinations. In certain lights, some colors tend to fade or "wash out," making reading difficult.



## Format

The text of the menu must be clear and legible. Old English script may appeal to the foodservice manager but may be illegible to customers. The distance between the menu item and the price should be short enough to allow each item to be easily identified. Dotted lines, double spaces, and indentations may be used to create an attractive format and make reading easier.

## Text

The menu should always identify the name of the foodservice operation, its phone number, and the hours of operation. The arrangement of menu items should be in the order that they are usually eaten during a meal. English should be used to describe the food, unless foreign languages are correctly used, or the foodservice operation is a gourmet establishment specializing in traditional continental fare.

Descriptive phrases are used to describe menu items to enhance their appeal to customers. Accuracy and truth is important when using descriptions of menu items. FDA (Food and Drug Administration) ruled in the ***truth-in-menu legislation*** in May 1995 that any restaurant using nutrient-content claims or health related claims on its menu must provide customers with backup nutritional information for all claims made on its menu. All food items must be described accurately. If the foodservice operation advertises "fresh salmon steaks," it cannot substitute "frozen salmon steaks". This would be illegal according the truth-in-menu regulations. Listing methods of processing or preparation is acceptable, as is the place of food's origin. Examples of these types of descriptive phrases are "honey-glazed carrots" or "Vermont maple syrup".

The use of color photographs of food on the menu is a good marketing technique provided the colors are true and the pictures illustrate the food in an appetizing manner. Do not use a photograph that is of poor quality or that discourages customers from trying menu items. The item when served must look exactly like the picture in size as well as plate presentation, or it could be interpreted as false advertising.

Foodservice managers must be sure that all words on the menu are spelled correctly. Also, any translations from one language into another language should be double checked for odd or offensive phrasing. Some phrases do not translate directly from one language into another.

Menu items should not be arranged in an obvious high-to-low pricing order. This type of text formatting sends a hidden message to customers that it is better to order the top, or higher priced items. The choice of a menu item should be left to the customer without any covert pressure from the management. Menus should be designed to sell food items, be appropriate for the operation, be within the foodservice operation's budget, and should be easily modified to neatly reflect any price changes.

### ◆ Essential Questions: ◆
### The Menu As a Marketing Tool

1. How is the menu used as a marketing tool?
2. What factors should be considered when designing a menu? Explain.
3. What is the purpose of the truth-in-menu legislation?

## SPECIAL MARKETING TECHNIQUES

Customers often look for and enjoy food presented in an elegant or unusual manner. Special marketing techniques may be inexpensive yet provide a lot of interest for customers and increase profits for the foodservice facility. Unique and effective methods for merchandising foods include:

- ***Presentation*** – special ways of presenting foods to the customer. Presentation may be as simple as serving a broiled steak on a sizzling platter or as elaborate as preparing Cherries Jubilee at table side. Food displays, such as dessert carts, tastefully decorated buffet lines, and creative garnishes, are good examples of presentation. Costumed service personnel may also be a presentation technique. Presentation adds that special flare to foodservice.

- ***Clip-ons*** – sheets clipped to the menu to sell a special item, such as the luncheon special or a new menu item. Folded cards which stand on the table are called ***table tents***. These frequently offer special desserts or beverages and are read by customers while they are waiting for their order to be taken or while they are eating. One well-planned table tent may boost the sales of an item, while more than one may create a cluttered appearance.

- ***Point-of-purchase sales*** – those items placed next to the cashier's stand for customers to purchase as they pay for their checks. These items often include candy and gum, packaged foods, novelties, and gift items.

Branding and the branding concept as a marketing tool has been a trend in the foodservice industry. Noncommercial operations, such as hospital and school cafeterias, have taken on the name brand concept. Branding refers to using products with national or local labels within a foodservice operation. The major reason why branding has become so popular is to increase sales. Customers recognize and are familiar with the brand logo. This method has increased sales of items on the menu as much as 75 to 100 percent.

- ***Retail-item branding*** refers to using individual items in an existing foodservice operation. For example, Skippy™ peanut butter is used in the school cafeteria. ***Restaurant branding*** refers to incorporating a national restaurant chain in an existing operation (for example, a Taco Bell™ located in a convenience store gas station). ***In-house branding*** is an additional type of branding also known as signature branding. These are items that are unique to a foodservice, such as high quality sandwiches or coffee. Starbucks‰ coffee, sold in Starbucks‰ coffee shops, is an example of signature branding.

- ***E-commerce*** – (electronic commerce) the business of buying and selling goods and services on the Internet. Foodservice operations use Web sites as marketing tools to generate sales revenue. Many franchise operations have Web sites that offer customers coupons, dine-in discounts, gift certificates, and other bonuses which are only available to Web site customers.

### ◆ Essential Questions: ◆
### Special Marketing Techniques

1. Why is presentation important in a foodservice establishment?

2. What is name "branding"? Explain three ways it is used in foodservice as a marketing tool.

## Chapter Highlights

- Marketing is instrumental in the financial success of a foodservice operation and involves the study of the product, the market, and the characteristics of advertising, promotion, and public relations.
- Marketing a foodservice establishment involves the location, building, food, service, and prices. Studying the market helps the foodservice manager determine who current customers are, who the potential customers are, what their cultural experiences are, and the expectations they will have.
- Information useful in conducting a market study may be obtained from city and county documents, the Chamber of Commerce, and potential customers.
- Careful consideration should be given to the design of the menu, as this is a constant merchandising tool of the foodservice operation.
- Special marketing techniques such as presentation, creative garnishing, menu clip-ons, table tents, points of purchase and name branding, are very effective in boosting sales.

# Chapter 40

## Building and Maintaining Customer Relations

### Chapter Focus

The following Essential Knowledge and Skills are discussed in this chapter:

5B Describe the roles of public relations and publicity in the food production and service industry.

5E Apply available technological innovations utilized in the food production and service industry to enhance sales and marketing strategies.

10G Apply available technology in foodservice.

11B Compare various ways of building and maintaining client-based services.

11E Utilize strategies for complaint resolution.

11H Implement quality assurance standards in all aspects of the food production and service industry.

11G Evaluate criteria affecting quality service.

### Chapter Vocabulary

- customer suggestion/comment card
- empowerment
- public relations
- quality assurance
- win-win problem solving
- word-of-mouth communication

***Public relations*** are the measures a business takes to win community respect. Sound public relations must be based on quality food served by well-trained foodservice employees who take pride and satisfaction in their work. Public relations are based on good management with healthy relationships maintained between management and employees, customers, the community, and stockholders of the company.

There are close interrelationships between advertising, promotional programs, and the foodservice operation's public relations.

We're Thankful •
For Your Business •

If used properly, advertising and promotions can foster positive feelings toward the foodservice establishment. Many messages sent to the surrounding community are silent but effective. These include the gracious treatment of customers; the tactful handling of customer suggestions and complaints; the awareness of customer's special needs (such as assistance to elderly and physically disabled persons); the production of informative and professional advertisements; and the maintenance of quality food and service. Foodservice managers take notice of the effects of marketing techniques and take steps to ensure these results speak well of the foodservice organization.

## QUALITY ASSURANCE

Building and maintaining a great public image as a foodservice organization involves many people. Most foodservice organizations develop a quality assurance program. ***Quality assurance***, guest satisfaction, and service strategy are other buzzwords representing the way an organization strives to assure each customer a high standard of service. Providing high quality service is not new to the hospitality industry, but it has received much attention lately because of its importance in such a competitive industry. Managers use a mix of intense service training, employee incentives, and peer pressure to assure good customer relations. Employees must deliver the product with interactive personality skills every time the customer experiences the establishment. Quality assurance programs measure how close the guest's expectations are met. Training seminars are designed and redesigned to eliminate the problems, train employees for better solutions, and to reward those who demonstrate the best service behavior.

Employees are likely to support the quality assurance program if they feel empowered to solve the customer's problem. ***Empowerment*** refers to the ability to solve issues for the customer by making immediate decisions on their own initiative and discussing these later with management. The trend in foodservice management is to let the employee "problem solve" for the guest and save the relationship rather than give the guest an excuse or seem apathetic. The manager may change the operating and accounting rules and procedures to help employees better meet the guest's needs and feel satisfied.

### ◆ *Essential Questions:* ◆
### *Quality Assurance*

1. What is quality assurance?
2. How can employees feel empowered to create a service-oriented business?
3. Why is customer service important to public relations?

## COMPLAINT RESOLUTION

It is inevitable that sooner or later an unhappy customer will need attention. Each foodservice operation needs a written customer complaint policy to ensure that every issue is addressed in a timely manner and problems are completely resolved in a satisfactory manner. Training and role-playing different scenarios help prepare employees to respond correctly. An example of a simple written customer complaint policy is shown in Figure 40.1.

## Steps In Handling Guest Complaints

1. Personalize the situation: Give your first name and use the guest's name.
2. Listen actively and intently.
3. Obtain the facts.
4. Be understanding; show care and empathy.
5. Don't react personally to the situation.
6. Generate a solution to the problem.
7. Act immediately. Do what you said you would do, and be professional at all times.
8. Follow up on the situation.

Source: *Restaurant Services, Beyond the Basics*, Carol A. Litrides & Bruce H. Axler, Copyright 1994 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

*Figure 40.1*

Complaint resolution should begin before the customer actually makes a complaint. Employees can learn to identify and correct customer problems before a complaint is voiced. Employees can do this by noticing the customer's attitude, tone of voice, and body language. Hospitality-based operations need employees to be observant and notice clues that indicate that a customer needs assistance, such as the following:

- tapping fingers
- looking around for assistance
- dropping flatware on the floor
- rattling ice in glass
- facial expressions
- sighing or groaning
- sign of bad work day
- how they look at food when it is presented

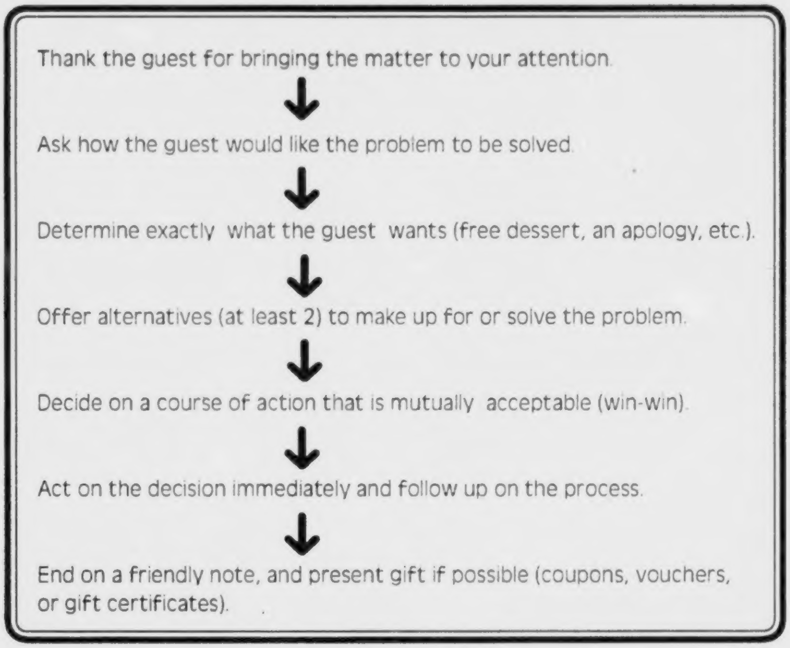
Employees who notice these signs can approach customers and offer assistance. In addition to assisting customers, employees may ask customers about their day. This makes the customer feel like the person cares, gives the employee more opportunities to meet needs, and helps the customer leave in a better state than before. Too often customers who have complaints about a product or service do not inform the business that there is a problem. They leave without saying anything and then later share their disgust with family and friends. By observing customer's body language, employees can detect a problem before it becomes an issue that will affect the reputation of the establishment.

### Win-Win Solutions

Food and beverage operations have policies and standards that specify ways to handle difficult situations where both parties feel satisfied with the solution. This concept is called ***win-win problem solving.*** Refer to Figure 40.2 for how to create a win-win resolution to a customer complaint.

Food and beverage establishments have policies that guide managers and employees to customer satisfaction. For example, if a customer had to wait an unusually long time for a meal, the manager may buy the meal for the customer. Regardless of the issue the customer should leave satisfied with the solution.

**Win/Win Problem Solving**



Thank the guest for bringing the matter to your attention.

Ask how the guest would like the problem to be solved.

Determine exactly what the guest wants (free dessert, an apology, etc.).

Offer alternatives (at least 2) to make up for or solve the problem.

Decide on a course of action that is mutually acceptable (win-win).

Act on the decision immediately and follow up on the process.

End on a friendly note, and present gift if possible (coupons, vouchers, or gift certificates).

*Figure 40.2*

## Importance of Guest and Customer Service

One important aspect of customer service is the way problems and complaints are resolved. If problems are managed well, customers will believe that the business cares about them and their needs and opinions. If complaints are handled poorly, customers will not be satisfied, will not return, and will tell others about the bad experience. This word-of-mouth publicity can give a business a bad reputation. One of the best forms of positive publicity is word-of-mouth. ***Word-of-mouth communication*** involves a personal communication regarding an opinion about a product, service, or business. Word-of-mouth communication establishes good or bad reputations. Customer service is one of the most important factors that influence people's perceptions of a business. After a reputation or perception is established, it is very hard to change.

A long-standing technique used for helping customers air their opinions about the quality of food and service is the ***customer suggestion or comment card.*** Customer suggestion cards are usually placed on the dining table or at the cash register. When completed, the card contains the customers' opinions about the quality of the food and beverages, the quality of the service, the friendliness of foodservice employees (hospitality), and often, the cost of the menu items. Additional space may be provided for any comments the customer may wish to make related to the meal service.

Foodservice managers read each of these cards and evaluate the comments. While some comments reflect one person's personal preferences, often customer comments reflect the opinion of the majority of the customers. When feasible, customer suggestions for change or improvement are incorporated into future training to improve customer service.

**◆ Essential Questions: ◆**
**Complaint Resolution**

1. What are the characteristics and results of a good foodservice public relations program?

2. Why is customer goodwill important to a marketing program? List three techniques for promoting customer goodwill in foodservice.

## USING TECHNOLOGY TO ACCOMMODATE CUSTOMERS

Technology shapes customers expectations in the foodservice industry. Technology is defined as the application of scientific knowledge, especially in industry or business to develop new products and new methods. The attraction of foodservice establishments now includes more than great service and good food. Robots and machines are not taking the place of a warm friendly human to provide service, but the ability to provide electronics and computerization can improve great service. The popularity of one upscale restaurant increased when laptop computers, video monitors, and stereo sound system were added to the booths where customers dine. The new technology allowed patrons to play video games, watch TV, access the Internet, and communicate via E-mail. Also, the Asian fad "karaoke" has packed many eating establishments with customers singing along to music as they follow the bouncing dot reading the lyrics. Many aspects of new technology will enhance marketing and sales in the 21st century. From ordering the food to paying for food, customer service is being improved by technology. Examples of new technology enhancing customer service include the following:

Guest Ordering
- hand held computers used by wait staff to take orders
- stationary touch screen allowing wait staff to send orders to kitchen electronically
- computerized ordering terminals generate legible guest checks, speed service, improve productivity, and avoid addition errors
- computerized drive-through systems that improve time and service
- fax machines make takeout and delivery food operations more efficient
- vibrating pagers that let guests know their table is ready

Guest Payment
- Computer systems allow taking credit and debit cards as a form of payment (credit card customers spend well over 50 percent more than cash customers).
- Automated Teller Machines in restaurants make payment convenient for customers.

**◆ Essential Questions: ◆**
**Using Technology to Accommodate Customers**

1. What technological innovations have improved customer service?

2. What computer applications in the entertainment industry have affected the foodservice industry?

## Chapter Highlights

- There are many subtle and close interrelationships between foodservice operations' marketing program and its public relations. Foodservice managers should be aware of these interrelationships and work to maximize them.
- One important aspect of customer service is the way problems and complaints are resolved. If problems are managed well, customers will believe that the business cares about customer's needs and opinions.
- Customer service or guest service is giving customers what they need in a timely manner by attending to all details that would make their experience pleasant and satisfying.
- Complaint resolution is gaining importance in customer service and employee training programs because of the increased competition for business in the foodservice industry.
- Business managers realize that customers prefer a human, personal touch in all transactions with the hospitality business, especially in resolving problems.
- Quality assurance programs ensure that standards and policies are developed by managers and facilitate training for employees to better serve the public.
- Word-of-mouth communication is a form of advertising, which involves a personal communication regarding an opinion about a product, service, or business. Word-of-mouth communication can be positive or negative and considerably affect the reputation of the foodservice organization.
- Technology in many forms affects the customer service and marketing interaction in the foodservice industry.

# REFERENCES

(1995) *Applied Food Sanitation. 4th ed.* Washington, DC: Educational Foundation of the National Restaurant Association.

Bennion, M. (1995). *Introductory Foods. 10th ed.* Upper Saddle River, NJ: Prentice Hall, Inc.

Campbell, S. (1981). *Cook's Tools.* New York: Bantam.

(1993). *Community First Aid and Safety.* St. Louis, MO: Mosby Lifeline Imprint of Mosby Yearbook, Inc.

Donovan, M., Ed. (1996). *The New Professional Chef: The Culinary Institute of America. 6th ed.* NY: John Wiley & Sons, Inc.

Drummond, K. (1997). *Nutrition for the Food Service Professional.* NY: John Wiley & Sons, Inc.

Grisslen, W. (1999). *Professional Cooking, 4th ed.* New York: John Wiley & Sons, Inc.

Haines, R.G. (1996). *Math Principles for Food Service Occupations, 3rd ed.* Albany, NY: Delmar.

(1993). *Handbook of Food Preparation. 9th ed.* Dubuque, IA: Kendall/Hunt.

Kasigris, C., and Thomas, C. (1999). *Design and Equipment for Restaurants and Foodservice: A Management View.* New York: John Wiley & Sons, Inc.

Labensky, S., and Hause, A. (1999). *On Cooking: A Textbook of Culinary Fundamentals. 2nd ed.* Upper Saddle River, NJ: Prentice Hall, Inc.

Loken, J. (1995). *The HACCP Food Safety Manual.* NY: John Wiley & Sons, Inc.

Molt, M. (1997). *Food for Fifty. 10th ed.* Upper Saddle River, NJ: Prentice Hall, Inc.

National Assessment Institute. (1994). *Handbook for Safe Food Service Management.* Englewood Cliffs, NJ: Regents/Prentice Hall.

Pavesic, D. (1998). *Fundamental Principles of Restaurant Cost Control.* Upper Saddle River, NJ: Prentice Hall, Inc.

Québec/Amérique Inc. (1996). *The Visual Food Encyclopedia.* Canada: Macmillan, Inc.

Ray, M.F. and Dondi, B.A. (1996). *Professional Cooking and Baking.* Mission Hills, CA: Glencoe.

Spears, M. (1995). *Foodservice Organizations: A Managerial and Systems Approach, 3rd ed.* Englewood Cliffs, NJ: Prentice Hall, Inc.

Splaver, B.R. (1991). *Successful Catering, 3rd ed.* New York: Van Nostrand Reinhold.

Spice Islands. (1999). *A Study in Spice.* San Francisco, CA: Spice Islands.

Texas Department of Health. (1999). *Features of the New Food Establishment Rules (TFER).* Austin, TX: TX Department of Health-Retail Foods Division.

Weigley, E., Mueller, D., and Robinson, C. (1997). *Robinson's Basic Nutrition and Diet Therapy, 8th ed.* Upper Saddle River, NJ: Prentice Hall, Inc.

# Index

**Symbols**

2/10: NET 30. 451

**A**

A la carte 27, 438
a la mode 383
abdominal thrusts 115
accident-prone. 102
accommodator service 82
accompaniment 292
accounts payable 459
accounts receivable 459
activated charcoal 265
add-ons 439
aging 312
al dente 362
albumen protein 325
ambulatory 177
American banquet service 82
American service 37
amino acids 151
angel food cakes 396
antipasto 272
AP 449
appetizer 271
appetizer salad 291
arborio rice 359
as purchased (A.P.) 249
aseptic 122
aspic 272
assets 459
attention alert signal 113
attitude 21
au gratin 352
au gratin dish 223
au jus 284
automat 79
automated self-service 72

**B**

back-of-the-house 12
bacteria 138
bain-marie 205
baked Alaska 384
baked soufflé 383
baker's scale 184
baking powder 368
baking soda 369
balance scale 184
balance sheet 458
banquet service 38
banquette 46
base 293
Basmati rice 359
batter method 372
Bavarian cream 382
Bearnaise sauce 283
béchamel 283
bettys 382
beverage cocktails 274
beverage station 263
bid buying 450
binder 293
biological hazards 136
biscuit method 370
bisques 281
blanching 344
bland diet 179
blast freezers 240
blending method 399
blind receiving 234
bloom 326, 375
body 293
boiled frostings 404
booster stand 63
borscht 282
bouillon 280
bran 357
brasier 221
break-even analysis 460
brewed coffee 265
broiler 195
broth 253
brown rice 358
brown stock 280
budding 366
budget 461
buffable finish 131
buffet service 72
buffet service 38
bulgar 359
butter cakes 396
butterfly 321
buttermilk 267
buyer 447

**C**

cafeteria service 72
caffeine 264
cake method 371
calorie-controlled diet 179
calorie-restricted diet 179
calories 150
canapés 272
candling 326
canned heat 83
capital 459
capons 317
cappuccino 266
car service 83
carbohydrates 151
carborundum stone 216
carhops 84
carousel oven 197
carton 344
cash over 97
cash short 97
cashier 95
catered service 82
caterer 82
catering unit 4
central kitchens 4
chafing dishes 223
chain or multi-unit operation 5
chalaza 325
charlotte 382
check tray 95
checkers 54
chef de rang 37
chemical hazards 138
chemical leaveners 368
chemical sanitizer 128
chest thrusts 116
chiffon cakes 396
chiffon fillings 420
chiffons 382
child labor laws 432
China cap 221
chocolate drink 267
chocolate milk 267
cholesterol 153
choux paste 417
chowders 281
clarify 331
Class A fire 111
Class B fire 111
Class C fire 111
clip-ons 489
club breakfasts 27
club sandwiches 304
coated rice 358
cold carts 206
cold course 38
cold food server 205
combination cooking method 253
comment card 496
commercial 2
commis de rang 37
commissaries 4
common name 233
complete protein 151
computer applications 464
computing the check 93
concept 484
condiment 255
conformation 313
congeal 297
consommé 280
contaminants 124
contamination 122
control jobs 12
convection ovens 196
convection steamer 196
convenience food 255
conventional method 399
conventional system 4
converted rice 358
conveyor dishwashing machine 127
conveyor toaster 198
conveyor-type dishwasher 208
cooked dressings 294
cool-rise method. 372
corporation 4
counter service 36, 71
couscous 359
cover 39
crate 344
cream puffs 416
cream-filled pies 420
creamed frosting 403
creaming method 399
credit terms 451
crimp 419
crimper 419
critical control point 145
cross-contamination 123
croutons 300
crudités 274
crullers 416
crustaceans 321
curdle 331
curds 334
cured fish 321
cured meat 312
custard fillings 420
customer suggestion 496
customer turnover 438
cutlery 216

cycle menus 174

## D

daily quotation bidding 450
Daily Reference Values (DRV) 158
dais 86
dealers 451
decker sandwiches 304
decorator's frosting 403
decorator's wheel 404
deep-dish pies 416
dehydrated 345
demitasse 266
demographic factors 483
depreciation 461
dessert salads 292
diabetic diet 179
dicing 347
Dietary Guidelines for Americans. 162
Dietary Reference Intakes (DRI) 158
dietetic technician 14
dips 274
dish machine racks 208
docked 419
door-type dishwasher 208
double boiler 221
double-action baking powder 369
double-panning 419
dough hook 189
drawer warmers 205
dressed fish 321
dressing 293
drive-thru pick up 72
drop batters 366
drupes 343
dry fillings 305
dry heat 252
drying agent 209
dumplings 382; 416
durum wheat 359

## E

E-commerce 465, 490
eclairs 416
edible portion (E.P.) 249
egg foam 396
egg wash 393
Eggs Benedict 333
Eggs Florentine 333
electric floor machine 131
emotional fatigue 103
employee involvement 430
employee schedules 462
Employee's Withholding Allowance Certificate (Form 431
empowerment 494
empty-calorie foods 162
emulsifier 331
emulsion 293
endosperm 357
English service 37
enriched 358
enriched rice 358
entrée 311
entrée salads 291
entry-level jobs 14
EP 449
Equal Employment Opportunity (EEO) 432
equity 459
espresso 266
espresso coffee machine 190
ethical practice 448
ethics 16
executive chef 14
exhaust hood 195
exit interview 474
expediter 23
expresso 266
extract 255

## F

Fair Labor Standards Act 431
family service 38
fat 152
fat-restricted diet 179
fat-soluble vitamins 153
fatigue 103
fermentation 369
fiber 152
fill 235
fill line 268
fillets 321
fillings 305, 402
finish 313, 320
Firing 473
first-degree 118
first-in, first-out (FI-FO) 239
fish steaks 321
fixed bid 450
fixed/static menus 436
flat 344
flat beater 189
flat icing 403
flatware 65
flavor enhancers 298
fleshing 318.
flight-type dishwashers 208
floaters 82
floating island 383
flower nails 407
flute 419
foam cakes 396
foam icings 404
FOB 449
FOB destination 449
FOB origin 449
fondant 404
food art 89
food checker 84
food chopper 188
food contact surfaces 125
food cost percentage 438
food cutter 188
food danger zone 136
Food Guide Pyramid 162
food processor 188
Food security 166
food slicer 187
foodborne illness 136
foodborne infection 136
foodborne intoxication 136
foodservice unit 3
forecast 436
fortified 358
fortified eggs 327
foundation sauces 283
franchise 4
free steamer 351
freeze-dried 296
freezer burn 204
French buffet 38
French dressings 293
French-style service 37
freshness 326
fricasseeing 316
front-of-the-house 12
frostings 402
frozen yogurt 383
fruit cocktails 274
fruit fillings 420
fruit pies 416
fruit soup 282
fruit whips 382
frying method 253
full-line purveyors 451

## G

garbage disposer 206
garnish 260
gauge 195
gazpacho 281
general diet 178
general-purpose ovens 196
germ 358
giblets 319
glassware 65
glaze 404
gluten 367
gluten 359
glutinous rice 359
grading 228
gratuities 23
gratuity 94
gross profit 460
gueridon 37

## H

hardware 464
Hazard Analysis Critical Control Point (HACCP) 143
heated carts 205
heated pass-throughs 205
heated pellets 205
Heimlich maneuver 115
herbs 253
high-ratio shortening 397
hollandaise sauce 283
Home meal replacement (HMR) 4
homogenized milk 267
horizontal promotions 473
horns 416
hrs d'oeuvres 272
host 37
hostess 37
hot carts 206
human factors 484
human relations 22
human resource management (HRM) 469
hygiene 124
hygrometer 241

**I**

ices 383
icing nails 407
icings 402
imitation 228
imitation cheeses 336
impingement oven 197
in-house branding 490
in-plant feeding units 4
income tax 431
incomplete protein 151
infrared lamps 205
infrared oven 197
ingredients 246
institutional feeding units 4
integrated plant management (IPM) 141
integrated software program 465
inventory 242
invoice 233
IRS Form 8027 99
issuing 241

**J**

Jasmine rice 359
job analysis 475
job description 471
jobbers 451

**K**

kneading 370
Kosher foods 166

**L**

labor cost budget 473
labor costs 436
layoffs 473
leavener 368
leavening agent 365
legumes 345
liabilities 459
liaison 283
lipids 152
liquid diet 179
liquid food extracts 253
liquor laws 432
litter picker 62
lug 344

**M**

maître d' 37
management 426
management jobs 12
marbling 312
marinade 291
marinate 291
marinating 315
market segments 484
market study 483
marketing 482
marzipan 411
mayonnaise 294
mealy crust 418
mechanical impact 66
medical nutrition therapy 178
meniscus 214
mental fatigue 103
menu 484, 487
meringue 422
meuniere 284
microorganisms 136
microwave ovens 197
middle management 15
mincing 347
minerals 155
mirepoix 280
mobile refrigerators 206
mobile unit catering 82
moist fillings 305
moist heat 252
molds 138
mollusks 321
monosodium glutamate 253
mousse 382
muffin method 370
multiple-tank dishwashers 208

**N**

Napoleons 416
National Fire Protection Association 104
natural cheeses 335
net profit 460
net worth 459
noncommercial 2
nonverbal communication. 22
nutrients 150
nutrition Facts 158
nutrition labeling 230

**O**

Occupational Safety and Health Act (OSHA) 102
off-premises catering 82
oft-filled pies. 416
omelet 330
on-premises catering 82
open-faced sandwiches 304
organizational goals 428
outdoor advertising 486
overhead costs 436

**P**

P.O. form 452
pack 235
packing list 85
paddles 218
papain 315
parfait 384
partnership 4
PASS 112
pass-through refrigerators 202
passenger tray service 83
passenger tray service 84
pasta
  types of 360
pasteurized processed cheese food 336
pastillage 411
pastry blade 189
pastry Dough 417
pastry flour 417
pastry Products 415
pastry shells 416
Pattern for Daily Food Choices 164
percent daily value 231
perishable foods 235
permanent emulsions 294
perpetual inventory 242
personality 21
personnel turnover 440
pesticides 132
physical fatigue 103
physical hazards 141
physical inventories 242
phytochemicals 157
pie press 420
piping 407
pit 343
pizza ovens 197
place setting 65
plain water icing 403
plate freezers 240
plate service 37
plates the food 36
plateware 65
point-of-purchase sales 490
polenta 359
policies 428
policy and procedures manual 428
pomes 343
portion 246
portion control 259
portion packs 69
portion scale 184
portioning 259
poultry 317
pounding 316
pounds per square inch (psi) 351
pour batters 366
pre-costed. 443
presentation 489
primary expenses 461
procedures 428
processed 228
processed cheeses 336
production jobs 12
production line 306
production schedule 256, 476
professionalism 16
profit 438
profit and loss statement. 458
promotions 487
proofing 369
proofing cabinet 375
protein 151
public relations 493
publicity 487
Puff paste 417
pumice brick 194
pumpernickel 304
punch 268
purchase order 452
purchase orders 227
purchase specifications 449
purchasing agent 448
puree 281
purveyors 451

Q

quality assurance 494
quick breads 304, 366
quick-service restaurants 71

R

raft 280
reach-in refrigerators 202
Real estate taxes 463
receiving clerk 453
receiving records 235
receiving sheets 235
receiving stamp 235
receiving tickets 235
rechaud 37
rechaud lamp 223
recipes 246
Recommended Dietary Allowances for Americans (RDA) 158
reconstitute 295
reconstitution oven 197
Reference Daily Intake (RDI) 158
refined 358
registered dietitian 14
regular ovens 196
regular sandwiches 304
rehydrate 296
relishes 274
rennet 334
requisition 241
requisition form 454
restaurant branding 490
retail cuts 312
retail-item branding 490
revolving oven 196
ribbon sandwich 274
ripened 334
roll-in process 377
roll-in refrigerators 202
rolled sandwich 274
rollwarmers 205
room service 83
rotated/cycle menus 436
roux 281
Royal icing 403
runners 76
Russian banquet service 82
Russian service 37
rye 304

S

sachet 280
salad bars 292
salad case 206
salads 292
salmonella 334
salmonella contamination. 305
samovar 223
sanitarian 122
sanitary 122
sanitary codes 431
sanitary codes 122
sanitary inspectors 431
sanitizing solution 126
sautéed 352
scalded 386
scalloped 352
scoring 316
scrap trays 208
sea salt 253
seafood cocktails 274
seasoned salt 253
seasonings 253
second-degree 118
selective menu 178
self-rising flour 368
self-service 72
self-service restaurants 74
self-sufficient back bar 73
selling up 29
service charge 99
service jobs 12
service stand 62
serviceware 65
sexual harassment 432
sharpening steel 216
shelf life 241
shortened cakes 396
shredding 347
side stand 63
sidework 61
sieve 221
silencer 39
simmering point 328
simple icing 403
simple syrup 385
single-action baking powder 368
single-crust pie 415
single-tank dishwashers 208
skill inventories 471
skim milk 267
skimmers 218
slicing 347
smoked salts 253
smorgasbord 38
sodium-restricted diet 179
soft custard 383
soft diet 179
soft-filled pies 416
software 464
sole proprietorship 4
sous chef 14
Spanish flan 383
special payment terms 451
specialty fillings 421
specialty sandwiches 304
specification cards 450
spices 253
spindle blenders 192
spoken menu 179
sponge cakes 396
sponge-dough method 372
sponges 382
spray buffing 131
spread 305
spring-form pans 221
spring-type scale 184
stabilizers 336
stack ovens 196
staffing tables 471
stale bread 304
standard 231
standard portions 259
standardized foods 230
standardized recipe 440
standardized recipes 246
standards of identity 230
stationary dishwashing machines 127
stations 209
steam tables 205
steamers 195
steeped 267
steward 447
stir-frying 352
stock 253
straight-dough method 372
Strategic business units (SBUs) 482
style 235
subtotal 94
suggestive selling 28
supplementary feedings 181
supply workers 76
support jobs 12
surrounding items 439

T

table d'hote 27, 438
table service 45
table setting 65
table tents 40, 489
table-service restaurants 45
Tabletop 64
takeout service 72
tallow 90
target market 484
tarts 416
task analysis 475
tax rate 463
tax table 94
tea sandwiches 274
tea sandwiches 304
temporary emulsion 293
Tip Reporting Alternative Commitment (TRAC) 99
theme 484
therapeutic diet 179
thermal shock 66
thermometers 216
thermostat 216
third-degree. 118
three-compartment sink 207
time cards 462
time records 462
time-and-temperature principle 142
tines 39
tools 213
toppings 300
tornado warning 114
tornado watch 114
total cost 452
Total Quality Management (TQM) 430
toxins 136
trade name 233
transfer 473
tray service 83
trayline service 36
trichinosis 316
trifle 383
trussing 320
truth-in-menu legislation 488
tureens 37
turnovers 416

two-crust pies 416
two-stage method 399

U

U.S. Grade A Fancy 345
U.S. Grade B Choice. 345
U.S. Grade C Standard 345
uncooked icings 403
unemployment compensation 432
unit 452
unit price 452
unrefined 358
utensils 213

V

vacuum-packed 327
variety meats 312
veal 312
velouté 283
vending machines 78
vendor 231
vendors 451
vents 419
vertical promotions 473
Vichyssoise 281
viruses 138
vitamins 153
voluntary separation 474

W

Wage and Tax Statement (Form W-2) 432
wage deductions 432
wage statements 432
walk-in refrigerators 202
warewashing 208
wash 419
water 157
water-soluble vitamins 153
waterless food warmer 205
waxy maize 421
weeping 298
Wehani rice 359
western-style 333
whey 334
white stock 280
whole milk 267
whole wheat 304
whole-grain 358
wholesale cuts 312
wholesomeness 228
wild rice 358
win-win problem solving 495
wire whip 189
word-of-mouth communication 496
work centers 209
work station 61
worker's compensation 432
written specifications 231

Y

yeast 366
yeasts 138
yield 249
yolk 325

# FOOD

## PRODUCTION, MANAGEMENT, AND SERVICES

## STUDENT ACTIVITY BOOK

FAMILY AND CONSUMER SCIENCES EDUCATION • TEXAS EDUCATION AGENCY • AUSTIN, TEXAS

BEST COPY AVAILABLE

# Food Production, Management, and Services

## Student Activity Book

Developed and disseminated by:
The Curriculum Center for Family and Consumer Sciences
Texas Tech University
Box 41161
Lubbock, TX 79409-1161

September, 2000

# Acknowledgments

The *Food Production, Management, and Services Student Activity Book* was prepared by the staff of The Curriculum Center for Family and Consumer Sciences. Development was funded by The Curriculum Center for Family and Consumer Sciences at Texas Tech University.

**The Staff of The Curriculum Center for Family and Consumer Sciences:**

Marilyn Wragg
Director

Lynn Perrin
Associate Director

Debbie Mumme, PhD
Curriculum Project Coordinator

Karla Duckworth
Curriculum Project Coordinator

Tracy Givens
Information Specialist/Editor

Sonja D. Koukel
Research Assistant

Becky Martinez
Editorial Assistant

Lacey Palmieri
Editorial Assistant

*******

Sonja Koukel served as staff writer for this publication. Lynn Perrin served as director of development.

*******

**The Staff of the Texas Education Agency Family and Consumer Sciences Education Unit:**

Gay Nell McGinnis
Program Director

Cindy Gruner
Program Specialist

Sharon Pierce
Program Specialist

Diane Salazar
Program Specialist

# *Preface*

Foodservice is big business. The foodservice industry is the nation's largest retail employer and the fastest growing industry in the United States. Thus, a multitude of career opportunities exist in the foodservice industry. Employment is available at a variety of levels ranging from beginning jobs that are open to the inexperienced, to the highest managerial positions that require extensive experience and training. Employment opportunities and qualification requirements vary according to location, type of business, and management style.

Publications in the *Food Production, Management, and Services* series provide information about various segments of the foodservice industry; some employment situations will fit the descriptions provided more closely than others. Therefore, hands-on experience and use of other resource materials are important components of the total training experiences needed by students interested in pursuing career opportunities in the foodservice industry.

This Student Activity Book complements the other documents in the *Food Production, Management, and Services* set of materials. The instructional materials designed for the foodservice occupational area include the following three components:

- The *Reference Book* provides information needed by employees in the foodservice occupational area. Each chapter begins with a "Chapter Focus" (the Texas Essential Knowledge and Skills addressed in that chapter) and a "Chapter Vocabulary." Terms listed as vocabulary may be located quickly by using the index. Within the text, italicized, bold-faced vocabulary terms are included with definitions or explanations. Illustrations of equipment and procedures used in the industry today aid in student learning. Throughout the chapter, "Essential Questions" boxes pose important questions to students about the material they have read. At the end of each chapter, the content is summarized in "Chapter Highlights."

- The *Curriculum Guide* provides information needed by teachers. Each chapter consists of a variety of instructional strategies for use in the classroom. Instructional strategies should be selected based on the local instructional arrangement, the level of students' abilities and experience, job situations, and time available. Teaching Aids are included for use in implementing the instructional strategies. An Answer Key is also provided for the activities in the Student Activity Book.

- The *Student Activity Book* provides a variety of pencil-and paper activities designed to reinforce the concepts presented in the Reference Book. Activities are designed to correlate with essential information presented in each chapter.

The *Food Production, Management, and Services* documents are part of an occupational education series which focuses on a broad range of employment opportunities. Each title in the series addresses one occupational training area. The materials may be used for one or two years of instruction. Curriculum materials for the other occupational areas in family and consumer sciences are available from The Curriculum Center for Family and Consumer Sciences, Texas Tech University, Box 41161, Lubbock, Texas, 79409-1161.

## *Table of Contents*

Acknowledgments ..... iii

Preface ..... iv

Chapter 1 – The Food Production and Service Industry ..... 1

Chapter 2 – Careers in Foodservice ..... 7

Chapter 3 – Providing Quality Service ..... 15

Chapter 4 – Forms of Service ..... 27

Chapter 5 – Table Service ..... 35

Chapter 6 – Sidework ..... 47

Chapter 7 – Counter Service and Self-service ..... 53

Chapter 8 – Specialized Types of Foodservice ..... 61

Chapter 9 – The Check, Change, and Gratuities ..... 67

Chapter 10 – Safe and Efficient Workplace Practices ..... 83

Chapter 11 – Emergency Procedures ..... 91

Chapter 12 – Employee, Equipment, and Facility Sanitation ..... 99

Chapter 13 – Food Safety and Sanitation Techniques ..... 111

Chapter 14 – Nutrition Matters ..... 121

Chapter 15 – Meeting Special Needs ..... 135

Chapter 16 – Food Production Equipment ..... 141

Chapter 17 – Cold Storage, Serving, and Cleaning Equipment ..... 149

Chapter 18 – Tools and Utensils ..... 157

Chapter 19 – The Foodservice Pantry: Food and Supplies ..... 167

Chapter 20 – Food Preparation Techniques ..... 173

Chapter 21 – Beverages ..... 185

Chapter 22 – Appetizers ..... 189

Chapter 23 – Soups and Sauces ..... 195

Chapter 24 – Salads ..... 203

Chapter 25 – Sandwiches ..... 209

Chapter 26 – Meat, Poultry, and Fish ........ 215
Chapter 27 – Eggs and Cheese ........ 227
Chapter 28 – Vegetables and Fruits ........ 239
Chapter 29 – Cereals and Pastas ........ 247
Chapter 30 – Breads ........ 253
Chapter 31 – Desserts and Cookies ........ 261
Chapter 32 – Cakes, Fillings, Frostings, and Icings ........ 269
Chapter 33 – Pastries and Pies ........ 277
Chapter 34 – Management Responsibilities ........ 289
Chapter 35 – Food Cost Control ........ 297
Chapter 36 – Acquisition and Storage of Food and Supplies ........ 303
Chapter 37 – Finance and Accounting ........ 311
Chapter 38 – Human Resources and Productivity ........ 317
Chapter 39 – Marketing ........ 323
Chapter 40 – Building and Maintaining Customer Relations ........ 329

# Chapter 1

# The Food Production and Service Industry

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 1:

1A Describe the organizational structure of food production and service systems.
1C Analyze societal, cultural, ethnic, demographic, and economic factors affecting the food production and service industry.
1E Summarize the roles and service of professional organizations serving the food production and service industry.
1F Predict the changes in the food production and service industry for the future.
3A Contrast various ownership and management structures in the food production and service industry.
3B Describe various types of food production and service operations.
4A Describe types of establishments in commercial foodservice.
4D Distinguish types of restaurant ownership.
4E Describe services to segments of the institutional foodservice industry.
7G Use appropriate terminology related to the food production and service industry.

## Introduction

Foodservice is one of the largest industries in the United States. The foodservice industry is constantly changing and growing due to the impact of technology, economics, demographics, politics, and competition. Commercial foodservice includes fast-food, fine dining restaurants, convenience stores, and home meal replacement markets. The noncommercial foodservice establishments serve industry, medical facilities, military bases, educational institutions, and transportation service units.

Characteristics of commercial and noncommercial foodservice facilities are not totally separate. Commercial foodservice refers to food as the primary function of the establishment. Noncommercial foodservice refers to food as a secondary activity.

## Activity 1-1 • True/False

**Directions**

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F** to the left of the statement. If the statement is **False**, rewrite the statement making it a true statement.

T F 1. Foodservice is one of the largest industries in the United States.

T F 2. Americans eat 45% of their meals away from home.

T F 3. The foodservice industry is the single largest employer of young people in the nation.

T F 4. More women and minorities hold jobs in management and supervision in foodservice than in most other industries.

T F 5. By the year 2005, 20 million people will be employed in foodservice.

T F 6. Americans now spend a greater percentage of their food dollars away from home.

T F 7. The majority of foodservice jobs available today are entry-level positions.

T F 8. During periods of economic inflation, people stop eating out.

T F 9. Longer life spans and improved health care have increased the number of persons seeking health care services, and thus, the need for foodservice in medical facilities has increased.

T F 10. The diversity of the customer market has led to the inclusion of ethnic foods on many foodservice menus.

# Activity 1-2 • Matching

## Directions

Listed below are some of the food production and service systems mentioned in the text. Match the food production or service system terms with the appropriate description by putting the correct letters in the spaces provided next to the numbered descriptions. Each letter may be used only once.

## Descriptions

_____ 1. Serves students, patients, or residents at military bases, prisons, Salvation Army and Red Cross facilities.

_____ 2. Prepares food to be served at a different location by schools, ships, airlines, businesses, or vending machines.

_____ 3. Foodservice establishments that allow customers to choose food items served by foodservice employees in a food line.

_____ 4. Usually serves food to guests at a special function (i.e., wedding, party, or banquet).

_____ 5. Offers dinner takeouts. These service systems are a growing trend in the foodservice industry.

_____ 6. Foodservices include fast-food, fine dining restaurants, convenience stores, and home-meal-replacement markets.

_____ 7. Provides ready-to-eat food for customers, residents, employees, or patients.

_____ 8. An establishment where meals are prepared, served, and eaten.

_____ 9. Prepares food items on the same premises that they are served, offering a more extensive menu.

_____ 10. Provides foodservice for employees in facilities where other types of foodservice are not readily available.

## Terms

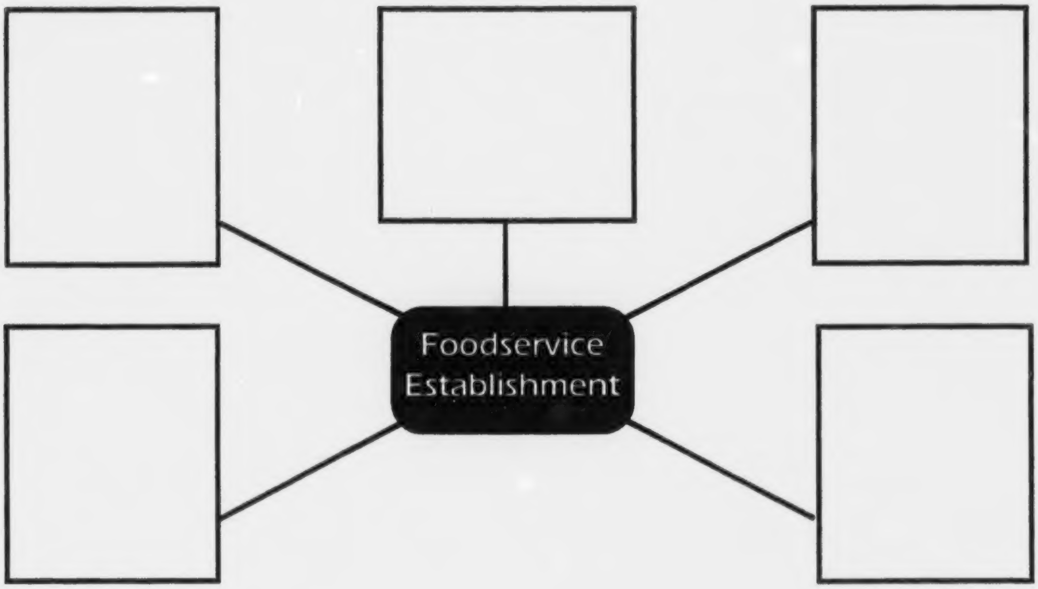
A. catering unit
B. central kitchen or commissaries
C. commercial
D. conventional system
E. foodservice unit
F. home meal replacement
G. in-plant feeding units
H. institutional feeding units
I. noncommercial
J. restaurant

## *Activity 1-3 • Short Answer*

**Directions**

Read each item. Write your response in the spaces provided.

1. Foodservice units vary in several ways. Write one way foodservice units vary in each of the five boxes.



2. Explain how seated-service and self-service differ.

3. Sometimes foodservice establishments combine seated-service and self-service. Give one example of where this might be used.

4. Quick-service units offer fast service from a limited menu. Name one example of a quick-service establishment. Explain your answer.

5. Explain how a convenience store is classified as a type of foodservice unit.

# Activity 1-4 • Sentence Completion

**Directions**

Circle the word that correctly completes each sentence.

1. Businesses owned by a group of people doing business together as a single legal entity are (**chains, corporations, franchises, partnerships**).

2. Several establishments with the same name or different names but with the same ownership are referred to as (**chains, corporations, franchises, partnerships**).

3. The types of businesses that are owned and operated by a single person are (**contracts, franchises, partnerships, sole proprietorships**).

4. An agreement that assigns the right to use a name or formula in return for a fixed fee or a percentage of sales volume is known as (**a contract, corporation, franchise, partnership**).

5. Businesses that are owned by two or more persons are (**chains, corporations, partnerships, sole proprietorships**).

## Activity 1-5 • Short Answer

**Directions**

**Complete the boxes by listing the advantages and disadvantages of foodservice work in the spaces provided.**

### Six Advantages of Foodservice Work

1. ______________________________
______________________________
______________________________

2. ______________________________
______________________________
______________________________

3. ______________________________
______________________________
______________________________

4. ______________________________
______________________________
______________________________

5. ______________________________
______________________________
______________________________

6. ______________________________
______________________________
______________________________

### Four Disadvantages of Foodservice Work

1. ______________________________
______________________________
______________________________

2. ______________________________
______________________________
______________________________

3. ______________________________
______________________________
______________________________

4. ______________________________
______________________________
______________________________

# Chapter 2

## Careers in Foodservice

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 2:

| | |
|---|---|
| 7G | Use appropriate terminology related to the food production and service industry. |
| 13 A | Determine preparation requirements for various levels of employment in a variety of food production, management, and service careers. |
| 13B | Analyze the future employment outlook in food production, management, and services. |
| 13C | Describe entrepreneurial opportunities in food production, management, and services. |
| 14B | Exhibit ethical practices as defined by the food production and service industry. |

### Introduction

A foodservice career can be developed in any type of foodservice operation and may take a variety of directions. Foodservice jobs may be found in restaurants, fast-food establishments, cafeterias, catering establishments, or institutions. Job descriptions may be found in the *Dictionary of Occupational Titles* and the *Occupational Outlook Handbook*. However, despite the variety of foodservice establishments, there are many similarities in the jobs. The career ladder in the foodservice industry is quite extensive with many varied jobs available at each level. The term "career ladder" is used to describe the levels of employment opportunities in business and industry beginning with entry-level positions and progressing to high-level management positions.

## Activity 2-1 • Matching

### Directions

Place the letter of each type of job in the blank to the left of the example that best illustrates it. Each letter may be used only once.

### Examples

___ 1. Vegetable preparer, meat cutter, pantry worker, cook, baker, and chef

___ 2. Setup personnel, dining room attendant, bartender, foodserver, cocktail server, dining room captain, host/hostess, and dining room manager

___ 3. Silver polisher, porter, sanitation supervisor, and steward

___ 4. Food runner, receiving room attendant, storeroom attendant, storeroom supervisor, food checker, cashier, purchasing steward

___ 5. Maitre d'hotel, banquet director, food and beverage director, dietitian, banquet steward, and executive chef

### Types of Jobs

A. control
B. management
C. production
D. service
E. support

## Activity 2-2 • Matching

### Directions

Match each foodservice job to the job category by placing the correct letter of each job in the blank to the left of the job category. Each letter may be used only once.

### Job Categories

___ 1. Management job

___ 2. Back-of-the-house, unskilled job

___ 3. Front-of-the-house, semi-skilled job

___ 4. Support job

___ 5. Back-of-the-house, semi-skilled job that is also a production job

___ 6. Front-of-the-house, unskilled job

___ 7. Back-of-the-house, semi-skilled job

___ 8. Back-of-the-house, skilled job that is also a production job

___ 9. Supervisory/management job that is also a service job

___ 10. Back-of-the-house supervisory job that is also a support job

### Foodservice Jobs

A. sous chef
B. bus person
C. dietetic assistant
D. executive chef
E. host/hostess
F. pantry worker
G. porter
H. steward
I. storeroom assistant
J. waitperson

## Activity 2-3 • Sentence Completion

**Directions**

**Complete** the following items by writing the word or words that best complete(s) the sentence.

1. ______________________________ is an unwritten code of behaviors and attitudes that is important for success in the workplace.

2. Overseeing daily operations and implementing decisions made at a higher level are duties performed by the ______________________________ .

3. The part of a foodservice establishment that is rarely seen by customers is the ______________________________ .

4. A four-year degree, plus internship and a qualifying exam, is required for the position of ______________________________ .

5. Positions that can be offered through on-the-job-training are ______________________________ jobs.

6. Jobs *not* directly involved in food production such as food processors, food suppliers, and foodservice equipment manufacturers are considered to be ______________________________ .

7. Jobs that generally require physical strength are referred to as ______________________________ .

8. The cook who is also a member of the management team is the ______________________________ .

9. Jobs that pay well and usually require professional training are considered to be ______________________________ .

10. A professional who fills in for the executive chef is the ______________________________ .

# Activity 2-4 • Short Answer

## Directions

Ashanti, Justin, Priscilla, Roberta, and Miranda are students currently enrolled in a high school careers class. They are all interested in obtaining jobs in the foodservice industry. Read the descriptions of each student. Decide which **entry-level position** is best for each person and write that job on the line provided. Give reasons for your decision. Choose from the following List of Jobs, using each job once only.

### List of Jobs

- Waitperson
- Counter attendant
- Dishwasher
- Host/Hostess
- Short-order cook
- Storeroom assistant
- Busperson
- Kitchen worker

1. Ashanti learned to cook from his dad who is a hotel restaurant chef. He likes cooking and helps prepare many meals for his family.
   Position: ______________________ Reasons: ______________________

2. Justin's family relocated often due to the nature of his mother's work. He feels comfortable in new situations and makes friends easily. Justin has good communication skills.
   Position: ______________________ Reasons: ______________________

3. Priscilla is a quiet person who likes working independently. Being health conscious, she enjoys a clean environment. Priscilla follows written directions well.
   Position: ______________________ Reasons: ______________________

4. Roberta is a member of the all-girls weight lifting team at the high school. She enjoys physical activity and takes direction well.
   Position: ______________________ Reasons: ______________________

5. Miranda is outgoing and gets along with all types of people. She enjoys teamwork and likes to stay busy.
   Position: ______________________ Reasons: ______________________

# Activity 2-5 • Short Answer

## Directions

In the space provided, describe the experience, training and/or education needed for the following foodservice jobs. Then, list two or more back-of-the-house and front-of-the-house jobs for each skill.

| Skill Level | Back-of-the-House | Front-of-the-House |
|---|---|---|
| 1. **Unskilled jobs:** | | |
| 2. **Semi-skilled jobs:** | | |
| 3. **Skilled jobs:** | | |
| 4. **Supervisory:** | | |
| 5. **Middle-management:** | | |
| 6. **Top–management:** | | |

## *Activity 2-6 • Case Studies*

**Directions**

The following case studies involve individuals working toward reaching their foodservice career goals. Read each situation. On the lines provided, write suggestions as to how the person can reach her/his goal. In your suggestions, include such factors as training and educational requirements and the person's personal characteristics (i.e., personal likes/dislikes, abilities, skills).

1. Chan's family owns and operates a small Chinese takeout service where he works after school, on weekends, and during summer vacations. After graduating from high school, his dream is to expand the business, perhaps through franchising.

2. Marisella has worked as a busperson in a local coffee shop for six months. Because she wants to earn more money to help finance her college tuition, her goal is to increase her tips by earning a promotion to waitperson. Marisella is a dependable employee with good customer skills.

3. LaWanda works full-time as the night manager at a 24-hour coffee shop. She enjoys implementing company policies and making the daily operational decisions. She is thinking of a career as a food and beverage director.

4. Brittany is in middle management at Bistro's. She really enjoys working in the kitchen preparing healthy meals and helping the general manager design daily specials. She is considering a career in dietetics.

5. Jason is attending a cooking school. He dreams of owning his own catering service.

6. Kyle is currently teaching hotel and restaurant management courses at the community college. After teaching for five years, however, he has grown restless and wants to travel more. He is exploring the idea of a foodservice management position.

7. Jessica works part-time as a waitperson at a local hotel restaurant. Occasionally, she has the opportunity to assist the manager in ordering food and supplies. She likes the back-of-the-house restaurant operations and wants to be a food and beverage director.

8. Steve is the host at an upscale steak house. He enjoys working the front-of-the-house and would like to have more managerial responsibilities.

9. Dorothy is a waitperson at the La Posta Mexican Restaurant. Occasionally, she gets the opportunity to fill-in as head waitperson. She has good communication skills and relates well to the other employees. Dorothy would like to be promoted to this position.

10. Share your foodservice career goal. How will you obtain your goal? What training and skills does your career goal require? What personality traits do you possess that will benefit you in this career?

# Chapter 3

# Providing Quality Service

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 3:

10A Describe roles and responsibilities in foodservice operations.

10B Analyze personal qualities and skills required of foodservice employees.

10C Utilize appropriate techniques for presentations and service in foodservice operations according to industry standards.

10E Perform appropriate tasks in foodservice according to industry standards.

11B Compare various ways of building and maintaining client-based services.

11D Apply techniques that promote customer service and satisfaction.

11F Demonstrate friendly customer service.

11G Evaluate criteria affecting quality service.

12A Demonstrate effective verbal, nonverbal, written, and electronic communication skills.

12C Demonstrate positive interpersonal skills including conflict resolution, negotiation, teamwork, and leadership.

12D Evaluate the relationship of good physical and mental health to job success and achievement.

12E Demonstrate appropriate grooming and appearance for the workplace.

12F Demonstrate appropriate business and personal etiquette in the workplace.

12G Exhibit productive work habits and attitudes.

## Introduction

Service personnel are responsible for dealing directly with the customer. They greet and seat customers, sell and serve food, receive money for sales, make accurate change, and keep records of sales.

Service personnel must interact effectively with customers. To do so they must develop personal skills for dealing with customers, develop an understanding of customers, develop merchandising skills, and develop the ability to manage varied serving responsibilities to ensure customer satisfaction.

## *Activity 3-1 • Evaluation*

### Directions

(A) **Categorized** below are personal skills needed by foodservice personnel. Read each question carefully. Complete the checklist by placing a " ✓" in the column that best describes your behavior in the foodservice establishment where you are employed or in the classroom laboratory.

| Personal Skills | Almost Always | Sometimes | Seldom |
|---|---|---|---|
| 1. **Appearance** | | | |
| • Do you start the day with a smile? | | | |
| • Do you check your appearance before leaving for work? | | | |
| • Do you keep your clothing in good repair – no rips, missing buttons, or sagging hems? | | | |
| • Does your clothing fit properly without being too tight or too loose? | | | |
| • Is your hair clean and neatly arranged? | | | |
| • Do you wear a hairnet or cap when on duty? | | | |
| • Females, is your makeup correctly applied in moderation on a clean face, rather than over old makeup? | | | |
| • Males, are you clean shaven or is your beard and/or mustache neatly trimmed? | | | |
| • Are your teeth clean and is your breath fresh? | | | |
| • Are your hands clean and your nails neatly manicured? | | | |
| • Do you use an effective deodorant? | | | |
| • Do you refrain from using excessive cologne? | | | |

| Personal Skills | Almost Always | Sometimes | Seldom |
|---|---|---|---|
| • Are your shoes clean, in good repair, and an appropriate style for the job? | | | |
| • Do you maintain proper posture when standing or walking? | | | |
| **2. Cooperation** | | | |
| • Do you observe and obey the rules and policies of the foodservice operation? | | | |
| • Are you willing to do whatever job is assigned to you? | | | |
| • Are you willing to do jobs or routine tasks not originally assigned to you? | | | |
| • Can you make adjustments to changes and unexpected situations? | | | |
| • Do you cooperate with your co-workers and supervisors? | | | |
| • Have you gained the friendship and respect of those with whom you work? | | | |
| • Do you respect the authority of those for whom you work? | | | |
| • Are you willing to try to work with someone in spite of a personality conflict? | | | |
| **3. Courtesy** | | | |
| • Are you courteous, polite, and patient with fellow employees and your supervisors? | | | |
| • Are you courteous, polite, and patient with customers, students, and others? | | | |

## Activity 3-1 (continued) • Evaluation

| Personal Skills | Almost Always | Sometimes | Seldom |
|---|---|---|---|
| • Do you respect the desires, interests, and opinions of others? | | | |
| **4. Communication** | | | |
| • Do you speak in a pleasant manner and moderate tone? | | | |
| • Do you have a reasonable command of the English language? | | | |
| • Do you use good telephone manners? | | | |
| • Do you take accurate messages? | | | |
| • Do you listen carefully and attentively? | | | |

(B) Review your responses on the self-evaluation checklist and complete the following statements.

My strengths are

My weaknesses are

My plan for personal improvement includes

## Activity 3-2 • Writing

**Directions**

Write a paragraph describing factors that influence customers' reasons for dining out. Include in the paragraph any customer held expectations toward foodservice establishments.

## Activity 3-3 • Short Answer

**Directions**

In the spaces provided, list five courteous gestures that you as a foodservice employee could exhibit to your customers.

1. ______
2. ______
3. ______
4. ______
5. ______

## *Activity 3-4 • Case Studies*

**Directions**

Read and consider each of the following scenarios. Answer the related questions using the blanks provided.

1. You are a waitperson in a steak house. A gentleman dining alone calls you to his table after his food is served. He ordered his steak well done but it was served medium rare. Understandably, he is displeased. The dining room has been very busy, and you think that he may have been given the wrong order. What is your best response?

2. It is late one evening and a large group comes to your restaurant for dinner. They talk and laugh loudly and seem to be disrupting the other guests. Customers at nearby tables appear annoyed. What action would you take that would be the least confrontational and provide the best results?

3. A blind woman arrives at the restaurant. You are responsible for both seating and serving her. What accommodations will you provide to make the woman's dining experience an enjoyable one?

4. An elderly gentleman is seated near the kitchen and complains to you about the noise level. He also informs you that he is on a restricted diet and cannot eat the type of eggs offered on the breakfast menu. How will you best handle these two issues?

5. You are seating a couple with three small children, two of whom will require high chairs. What type of area would be best for them? What other considerations should you make while taking their order and serving them?

# Activity 3-5 • Short Answer

**Directions**

**For each** of the following customer types, provide an effective and courteous manner in which to deal with the situation. Write your best response in the spaces provided.

1. A customer is in a *hurry*
2. A customer is *intoxicated*
3. A customer is a *complainer*
4. A customer is *indecisive*
5. A customer is a *joker* or *overfamiliar guest*
6. A customer is in a *wheelchair*
7. A customer is *angry*
8. A guest becomes *ill*
9. A guest has *dietary restrictions*
10. An older guest is *dining alone*

# Activity 3-6 • Short Answer

**Directions**

Read the following items regarding menus and other promotional material used in foodservice. Write your answers in the spaces provided.

1. Describe two public relations techniques used by service personnel to promote a foodservice establishment.

(A) ________________________________________

(B) ________________________________________

2. Explain how a restaurant menu is used as a merchandising tool.

________________________________________

________________________________________

3. List three pieces of information that service personnel should know about the menu.

(A) ________________________________________

(B) ________________________________________

(C) ________________________________________

4. Name and describe the two basic types of menus used in restaurants.

(A) ______________

________________________________________

(B) ______________

________________________________________

## Activity 3-7 • Multiple Choice

**Directions**

This activity is designed to help you improve your sales abilities by allowing you to practice suggestive selling. For each question, put the letter of the suggested food item in the blank to the left. Then, using the space provided, give a reason for your choice.

___ 1. Which of the following would you suggest for a tired, chilled guest?

A. salad plate
B. vegetable stew

Reason: ____________________

____________________

___ 2. Which of the following would you suggest for a guest who is on a fat-restricted diet?

A. deep-fried fish
B. lean, broiled fish

Reason: ____________________

____________________

___ 3. Which of the following would you suggest for a person who is on an egg-restricted diet?

A. French dressing
B. mayonnaise-based dressing

Reason: ____________________

____________________

___ 4. Which of the following would you suggest for an office worker?

A. meat, potatoes, and gravy
B. soup and a sandwich

Reason: ____________________

____________________

___ 5. Which of the following would you suggest for a person who is on a sugar-restricted diet?

A. cake
B. fresh fruit compote

Reason: ____________________

____________________

## *Activity 3-8 • Short Answer*

**Directions**

**Select complements** appropriate for the specific food items listed below. Write your answer in the space provided.

**Example**

Dinner entrée: vegetables, soup or salad, dessert

1. Hamburger: ______________________________
2. Spaghetti: ______________________________
3. Eggs and toast: ______________________________
4. Steak: ______________________________
5. Cold Sandwich: ______________________________

## *Activity 3-9 • Short Answer*

**Directions**

**For each food** item listed below, write five colorful adjectives describing the food. Remember to use adjectives that will increase a customer's appetite for the food item. One example for each category is provided.

**Fruits**

luscious

**Bread**

hot

**Vegetables**

crisp

**Cake**

tender

## Activity 3-10 • Short Answer

**Directions**

**In the blanks** provided, answer the questions regarding the management of foodservice **responsibilities**.

1. List two organizational tips that help foodservice personnel save time and energy.

(A) ______________________________

(B) ______________________________

2. List the ten steps used for proper lifting of food trays.

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________
10. ______________________________

3. Provide one reason why it is important for service personnel to be organized.

______________________________

4. Identify three ways service personnel can help reduce food costs in the foodservice establishment.

(A) ______________________________

(B) ______________________________

(C) ______________________________

5. Identify four common errors on guest checks that affect food costs in the foodservice establishments.

(A) ______________________________

(B) ______________________________

(C) ______________________________

(D) ______________________________

# Chapter 4

# Forms of Service

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 4:

| | |
|---|---|
| 4B | Describe forms of service utilized in foodservice establishments for presenting food to guests. |
| 7G | Use appropriate terminology related to the food production and service industry. |
| 10A | Describe roles and responsibilities in foodservice operations. |
| 10C | Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards. |
| 10E | Perform appropriate tasks in foodservice according to industry standards. |

## Introduction

Foodservice is versatile. Counter, trayline, seated service, or a combination of these is offered by foodservice units. Foodservice employees need to become familiar with the forms of service available and the table settings used for each. Service of food to the customer is the major objective of a foodservice organization.

## Activity 4-1 • Short Answer

**Directions**

**Using the spaces provided below, (A) name the three main styles of foodservice and (B) list three characteristics of each type.**

1. (A) ______________________________

   (B) 1. ______________________________

   2. ______________________________

   3. ______________________________

2. (A) ______________________________

   (B) 1. ______________________________

   2. ______________________________

   3. ______________________________

3. (A) ______________________________

   (B) 1. ______________________________

   2. ______________________________

   3. ______________________________

540

# Activity 4-2 • Matching

## Directions

Listed below are styles of seated service and characteristics of each style. Match the styles of seated service to the characteristics that best describe it by writing the letter of the styles of seated service in the blanks to the left of the characteristics. Letter may be used more than once.

## Styles of Seated Service

A. American
B. banquet
C. buffet
D. English
E. French
F. Russian
G. family

## Characteristics

____ 1. Two waiters "finish" the food preparation at the table.

____ 2. The food ordered by each customer is put on a plate in the kitchen and garnished appropriately.

____ 3. The waiter serves the desired portion of food to the guests and returns the unserved food to the kitchen.

____ 4. Tables are prelaid including the cold course, ice water, and bread and butter.

____ 5. Guests serve themselves from a choice of foods placed on a long serving table.

____ 6. Assisted by servants, the head of the household serves the food.

____ 7. The food is served from a cart called a *gueridon*.

____ 8. Used when serving a predetermined menu to a set number of guests.

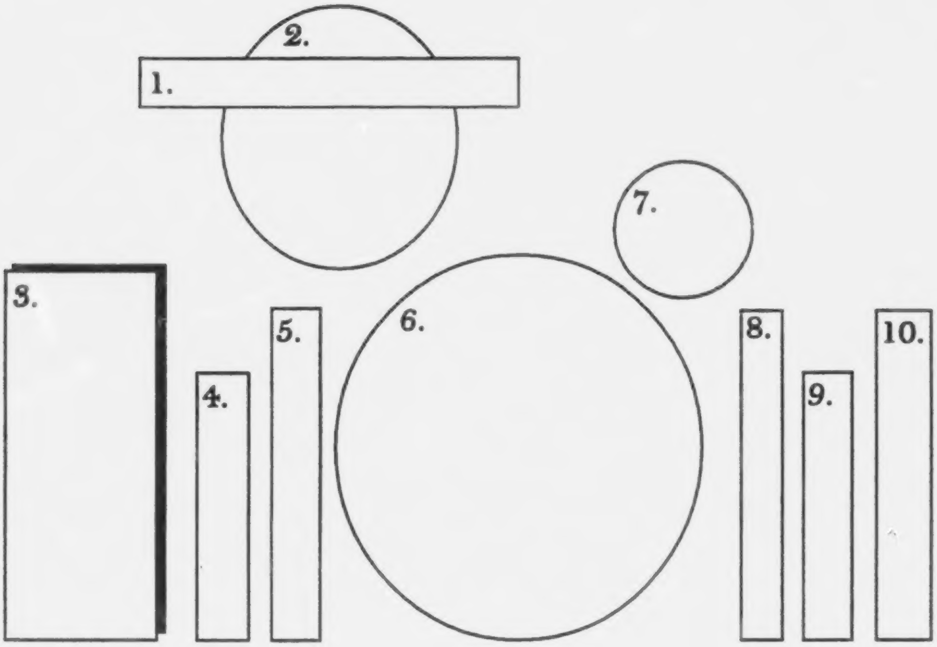
____ 9. Serving dishes are placed in the center of the table, and the food is passed around the table by the guests who serve themselves.

____10. A host, hostess, or maitre d' greets and seats customers and gives them a menu.

## *Activity 4-3 • Identification*

### Directions

**Examine** the diagram below illustrating an American dinner cover. Identify the type of flatware, dinnerware, glassware, etc., that should occupy each position on the diagram. Write the name of the item on the line corresponding to the number on the diagram.



1. ______________________ 6. ______________________

2. ______________________ 7. ______________________

3. ______________________ 8. ______________________

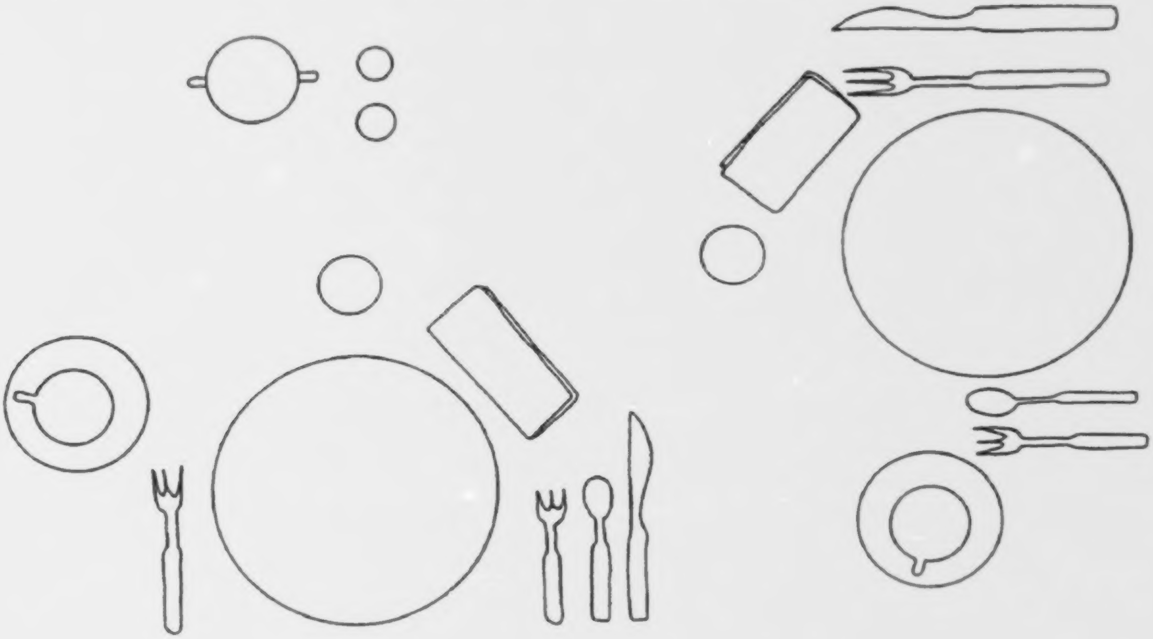
4. ______________________ 9. ______________________

5. ______________________ 10. ______________________

## Activity 4-4 • Identification

**Directions**

There are at least five mistakes in the table setting below. Write each mistake you find in the spaces provided below. NOTE: The setting is meant to be an American luncheon setting.



1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

## *Activity 4-5 • Illustrating*

Directions

**Complete each** of the boxes below by diagraming the American cover designated below each box. In **your diagram,** be sure to include the items listed for each cover.

1. **Standard dinner setting:** napkin, salad fork, dinner fork, cover plate, dinner knife, teaspoon, soup spoon, butter spreader, bread and butter plate, water goblet, wine glass.

2. **Standard breakfast setting:** napkin, dinner fork, dinner knife, teaspoon, water glass.

3. **Standard luncheon setting:** napkin, dinner fork, dinner knife, teaspoon, bread and butter plate, water glass, coffee cup, saucer.

# Activity 4-6 • Illustrating

## Directions

**Complete** the boxes below by diagramming the two types of buffet service. In each diagram, be sure to include the items listed below each box and designate the flow of traffic using well-placed arrows.

1. **Buffet Service for a Large Number of Guests:** carving station, centerpiece area, entrée, plates, salad, starch selection, vegetables.

2. **Buffet Service for a Small Number of Guests:** bread, centerpiece area, entrée, napkins, plates, relish, silver, vegetables.

# Chapter 5

## Table Service

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 5:

4B Describe forms of service utilized in foodservice establishments for presenting food to guests.

7G Use appropriate terminology related to the food production and service industry.

10A Describe roles and responsibilities in foodservice operations.

10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.

10E Perform appropriate tasks in foodservice according to industry standards.

10G Apply available technology in foodservice.

11D Apply techniques that promote customer service and satisfaction.

### Introduction

In table service, food is served to customers by the wait staff. Customers are seated at either tables or booths. Table service restaurants offer limited to extensive menu choices. They may feature a certain type of food like seafood, or they may carry a variety of foods. Some table service restaurants have a special theme such as ethnic, regional, or a selected period of time, or they may be supper clubs or night clubs.

Table service restaurants are found in specially-designed buildings, office buildings, department stores, shopping centers, ships, or trains. In addition to table service, their service might include counter service, soup and salad bars, buffet service, banquet service, room service, or takeout service.

Customer complaints about poor service (i.e., waiting in line or being served the wrong menu item) are a problem in the foodservice industry. Customers complain about poorly served food that is of high quality. Food of mediocre quality will meet the customer's satisfaction if it is served well. Well-trained and courteous wait staff are essential to effective table service.

## Activity 5-1 • Short Answer

**Directions**

**Read the following statements.** Place your responses in the spaces provided.

1. Describe two appropriate ways for greeting guests in a restaurant.
   (A) ____________________
   (B) ____________________

2. Give the procedure you should follow in these situations:
   (A) A guest has dinner reservations ____________________
   (B) A guest does not have dinner reservations ____________________

3. List two considerations that may affect the selection of a table for restaurant guests.
   (A) ____________________
   (B) ____________________

4. At a table, explain when you should pull out the best seat for:
   (A) a young lady ____________________
   (B) the eldest lady ____________________

5. List two types of people that might need assistance when being seated and explain how you would assist them.
   (A) ____________________
   (B) ____________________

## Activity 5-2 • Short Answer

**Directions**

You are hired as a host/hostess in a nice restaurant. It is your responsibility to greet and seat guests. Listed below are various types of people you will greet each week. For each type of guest, (A) explain where you will seat them and (B) provide a reason for you decision. Write your answers in the spaces provided.

1. A large family celebrating a birthday.
   (A) ______________________________
   ______________________________
   (B) ______________________________
   ______________________________

2. A young couple with a two-year-old child requiring a high chair.
   (A) ______________________________
   ______________________________
   (B) ______________________________
   ______________________________

3. Two individuals, one in a wheelchair.
   (A) ______________________________
   ______________________________
   (B) ______________________________
   ______________________________

4. Four individuals with dinner reservations.
   (A) ______________________________
   ______________________________
   (B) ______________________________
   ______________________________

5. Three individuals in a hurry, without dinner reservations.
   (A) ______________________________
   ______________________________
   (B) ______________________________
   ______________________________

## Activity 5-3 • Sentence Rewriting

**Directions**

**Listed below** are procedures for presenting menus to guests. If you think the statement is correct, do nothing. If you think the statement is incorrect, rewrite the statement making it correct. Use the space provided to record your answers.

1. Handout the menus to each guest as they are seated.

______________________________________________

______________________________________________

2. The host/hostess stands at the head of the table and hands menus to each guest.

______________________________________________

______________________________________________

3. In a large group, give the menu to the oldest female first and then proceed in a clockwise direction around the table.

______________________________________________

______________________________________________

4. Help guests with their napkins before giving them a menu.

______________________________________________

______________________________________________

5. While guests study the menu, you may busy yourself by checking your watch, looking out the window, and talking with other guests.

______________________________________________

______________________________________________

## Activity 5-4 • Matching

### Directions

On the left are questions that customers might ask regarding menu items. On the right are the types of information needed to answer the questions. Match the types of information to the question by placing the letter of the information in the blank to the left of the question. Each letter may be used only once.

### Questions

_____ 1. "I would like to order this, how do you say it?"

_____ 2. "I've never heard of this before - what is it?"

_____ 3. "I'm hungry, what's good today?"

_____ 4. "Can I get only half an order of this and substitute the rice for corn?"

_____ 5. "I'm in a hurry, how long will this take?"

_____ 6. "What comes with the broiled chicken plate?"

_____ 7. "I ate here two months ago, do you still have watermelon?"

_____ 8. "Can I get a bowl of tomato soup?"

_____ 9. "Does the baked ham come with a slice of pineapple?"

_____ 10. "Is there any more rare-cooked Prime Rib available?"

### Types of Information

A. accompaniment
B. daily soup
C. daily Special
D. description
E. garnishes
F. "in season" items
G. policies
H. preparation time
I. pronunciation
J. soldout food items

## *Activity 5-5 • Short Answer*

Directions

You have been working at a foodservice establishment for six months and your employer has just hired a new employee. Your employer is impressed with your work and asks you to teach the new employee the proper procedures for writing orders. Write the procedures for writing orders in the spaces provided.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________

## *Activity 5-6 • Abbreviations*

Directions

Listed below are abbreviations used in writing customers' orders on guest checks. Write the corresponding food item next to the abbreviation using the blanks provided.

1. A pie, van ____________
2. BBQ ____________
3. bp,s ____________
4. C Burg ____________
5. Chef Sal ____________
6. chow ____________
7. Cof ____________
8. col ____________
9. ff ____________
10. FChix ____________
11. FrC ____________
12. GC ____________
13. Hs,r ____________
14. mash ____________
15. ol ____________
16. PC ____________
17. ShC ____________
18. T ____________
19. Ts ____________
20. VanSChoc ____________

## Activity 5-7 • Short Answer

**Directions**

Read the following items. Write your answers in the spaces provided.

1. Give an example of how to summarize an order.

2. List four commonly used methods for placing orders in the kitchen.

(A)

(B)

(C)

(D)

3. After recording customers' orders, identify when the orders should be placed in the kitchen.

4. Explain why the kitchen needs to know when one table of guests requests separate checks.

5. Name two types of action that can be taken when customers' orders do not appear within a reasonable length of time.

(A)

(B)

6. Name one way in which management can aid kitchen personnel in timing orders.

## *Activity 5-8 • Matching*

### Directions

Listed below are steps for the procedures used in picking up, assembling, and inspecting orders. Place an "A" in the blanks that are steps in assembling orders, an "I" in the blanks that are steps in inspecting orders, and a "P" in the blanks that are steps in picking up orders. Each letter may be used more than once.

(A) Assembling
(I) Inspecting
(P) Picking up

### Steps

_____ 1. Gather accompaniments.

_____ 2. Make sure the quantity of food is correct.

_____ 3. All the needed equipment should be on the tray.

_____ 4. Check for spilled foods.

_____ 5. Be sure needed serving equipment is on the tray.

_____ 6. Be sure food is attractively served with proper garnishes.

_____ 7. See if order is correct.

_____ 8. Make sure food is properly cooked.

_____ 9. Separate hot foods from cold foods on the tray.

_____ 10. Serve foods as soon as possible to ensure proper serving temperatures.

# Activity 5-9 • Numbering

## Directions

**Food and** beverages are served in a prescribed manner in most foodservice establishments. For each meal below, list the order of service for the food items by placing numbers in the blanks to the left of the item. Place a "1" by the first item to be served, a "2" by the second item to be served, and so on for each food item in each meal. When you have placed numbers in each blank, add up the numbers circled for each meal and compare that total with the total listed. If your total does not match the correct total listed, check your addition and your answers to see if you have the correct order of service for the food items.

### Breakfast

◯ cereal
____ menu
◯ jellies, jams, syrup
◯ fruit and juice
____ eggs, meat, bread, other hot food
◯ water; offer coffee
14 TOTAL

### Lunch

◯ beverage
____ bread and butter
◯ main dish
◯ water
____ menu
◯ bread or rolls
____ dessert
____ salad served with the main dish
____ appetizer, soup, or salad
____ side dishes
22 TOTAL

### Dinner

◯ appetizer, soup, or salad
◯ coffee or demitasse
◯ menu
____ bread or rolls
____ water
____ main entrée
____ beverage
◯ dessert
19 TOTAL

## *Activity 5-10 • Short Answer*

**Directions**

**Explain** the order of serving the following guests. Write your answers in the space provided.

### In what order do you serve guests when . . .

1. A man and woman are seated together?____________________

2. Two couples are seated together?____________________

3. Three couples are seated together?____________________

4. Six or more people are seated together?____________________

5. It is not apparent as to which group member is the host or hostess?____________________

## Activity 5-11 • Sentence Completion

**Directions**

It is important to know the general rules of serving food and beverages in order not to inconvenience guests. Complete the following statements on foodservice procedures for serving by placing an "X" by the correct answer. Reinforce the serving procedure by reading the statement and writing the answer selected in the blank provided.

### At a Table

1. Serve food from the ____________ .
   _____ left _____ right

2. Remove food from the ____________.
   _____ left _____ right

3. Refill beverages from the ____________.
   _____ left _____ right

4. Serve beverages from the ____________.
   _____ left _____ right

5. Serve and remove bread and butter from the __________ .
   _____ left _____ right

### At a Booth

6. Serve the guests on the _________ first.
   _____ left _____ right

7. Serve the guests on the right with the __________ hand.
   _____ left _____ right

8. Serve the guests on the left with the ____________ hand.
   _____ left _____ right

9. Place dishes on the table with the thumb on the _________ edge of the plate.
   _____ lower _____ upper

10. Plates should be __________ into place.
    _____ lowered _____ slid

# Chapter 6

# Sidework

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 6:

7G Use appropriate terminology related to the food production and service industry.
10A Describe roles and responsibilities in foodservice operations.
10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.
10E Perform appropriate tasks in foodservice according to industry standards.

## Introduction

Sidework includes all of the duties assigned to foodservice personnel in addition to service duties (duties performed during serving hours). Responsibilities for sidework duties are shared by service personnel. An assigned work area, usually a certain number of tables or counter stools, is called a work station.

The overall responsibility for the dining room belongs to the head waitperson, the captain, the hostess, or a manager. In some foodservice establishments, the work of cleaning, preparing, and maintaining the dining room may be divided equally and rotated among all service personnel. In other establishments, a single individual may be responsible for completing one task in all areas of the dining room. In many restaurants, a dining room attendant (busperson) is assigned to work with a waitperson in serving a work station. In this case, routines may be divided.

# Activity 6-1 • Matching

## Directions

**Place the letter of the vocabulary word in the blanks to the left of the appropriate definitions. Each letter may be used more than once.**

## Definitions

_____ 1. All of the duties assigned to foodservice personnel in addition to service duties.

_____ 2. Also referred to as a bus station.

_____ 3. Area that contains supplies needed during meal service.

_____ 4. Area that contains the supplies needed in the dining room.

_____ 5. Area that doubles as a pantry.

_____ 6. Area that must be stocked before serving hours to ensure maximum use.

_____ 7. An assigned work area, usually with a certain number of tables and/or counter stools.

_____ 8. Areas that are equipped with electrical outlets and running water.

_____ 9. Duties performed during serving hours.

_____ 10. Work area usually located in the center of the room.

## Vocabulary Words

A. booster stand

B. service duties

C. service stand

D. side stand

E. sidework

F. work station

## Activity 6-2 • Matching

### Directions

Listed below are closing, opening, and serving duties. Read each item, and using the blanks provided to the left of the statement, write a "C" if it is a closing duty, an "O" if it is an opening duty, and an "S" if it is a serving duty. Each letter may be used more than once.

### Duty

C = Closing
O = Opening
S = Serving

### Serving Duties

_____ 1. Make sure necessary food items are brought from the kitchen.
_____ 2. Clean containers and properly store perishables.
_____ 3. Lock pantry, cabinets, and refrigerator.
_____ 4. Keep the service stand neat and clean.
_____ 5. Turn on lights and gas or electrical appliances.
_____ 6. Check for supplies that are getting low.
_____ 7. Make sure warming unit in service stand works properly.
_____ 8. Clean side and booster stands.
_____ 9. Clean condiment containers as needed.
_____ 10. Clean the dining room and put everything in its place.
_____ 11. Inspect dishes, glasses, and flatware.
_____ 12. Fill ice bins and make coffee.
_____ 13. Clean and reset tables as needed.
_____ 14. Restock matches toothpicks, napkins, dishes, cups, and flatware.
_____ 15. Clean and refill condiment containers.
_____ 16. Clean up food and beverages that have been spilled.
_____ 17. Stock the service stands.
_____ 18. Replenish service stands.
_____ 19. Make sure condiments are ready for use.
_____ 20. Wash pitchers and ice buckets placing them upside down to dry.

## *Activity 6-3 • Short Answer*

**Directions**

Read each of the following statements. Write your responses in the blanks provided.

1. For each of the following, provide two examples of what to look for when inspecting serviceware for cleanliness and appearance.

   (A) Plateware:

   1. ____________________

   2. ____________________

   (B) Glassware:

   1. ____________________

   2. ____________________

   (C) Flatware:

   1. ____________________

   2. ____________________

2. Efficiency in setting, clearing, and resetting tables makes it possible to serve more customers during the service period. For each duty listed below, provide one method that will increase efficiency.

   (A) Setting: ____________________

   (B) Clearing: ____________________

   (C) Resetting: ____________________

3. For each of the general cleaning duties listed below, give the proper cleaning method.

   (A) Dusting:

   - High surfaces: ____________________
   - Light-weight objects: ____________________
   - Window sills and TV screens: ____________________
   - Wooden tables: ____________________
   - Wooden chairs: ____________________
   - Mirrors and glass: ____________________

- Floors: ______________________________

(B) Vacuuming carpeted floors: ______________________________

4. Explain the proper procedure for using dusting oil or polish. ______________________________

5. Explain the proper method for storing oily cloths after dusting. ______________________________

6. Explain why it is better to dust after sweeping with a broom. ______________________________

# Chapter 7

## Counter Service and Self-service

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 7:

4B Describe forms of service utilized in foodservice establishments for presenting food to guests.

7G Use appropriate terminology related to the food production and service industry.

10A Describe roles and responsibilities in foodservice operations.

10C Utilize appropriate techniques for presentation and service in foodservice operations according to industry standards.

10E Perform appropriate tasks in foodservice according to industry standards.

10G Apply available technology in foodservice.

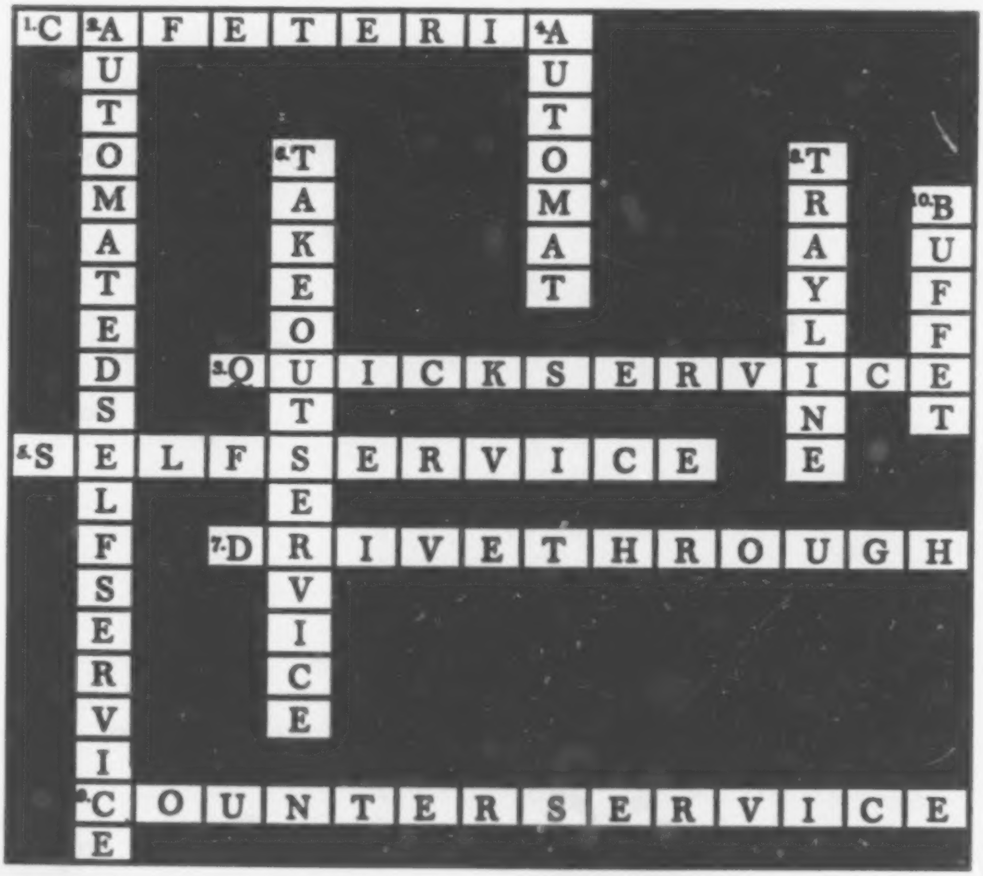
### Introduction

Many foodservice customers want a moderately priced meal and quick service. Quick-service restaurants meet the needs of these customers by providing counter, tray, or self-service. Counter, tray, and self-service are usually inexpensive and informal styles of service. They allow for rapid service with a minimum of assigned workers.

## Activity 7-1 • Puzzle

**Directions**

The following crossword puzzle has the answers already filled in, but the clues are missing. In the spaces provided, write a clue for each answer.


1. CAFETERIA
2. AUTOMATEDSELFSERVICE
4. AUTOMAT
6. TAKEOUTSERVICE
8. TRAYLINE
10. BUFFET
3. QUICKSERVICE
5. SELFSERVICE
7. DRIVETHROUGH
9. COUNTERSERVICE

**Across Clues**

1. ______________________________

3. ______________________________

5. ______________________________

7. ______________________________

9. ______________________________

**Down Clues**

2. ______________________________

4. ______________________________

6. ______________________________

8. ______________________________

10. ______________________________

# Activity 7-2 • Matching

## Directions

To review the procedures for preparing the foodservice facility for counter and self-service, complete the following activity. In the blank to the left of each preparation procedure, write the letters of the foodservice facility that would require that preparation procedure. Each letter may be used more than once.

## Preparation Procedures

_____ 1. Check supplies and restock counter as needed before serving hours.
_____ 2. Arrange supply tables and shelves neatly.
_____ 3. Desserts should be grouped according to type.
_____ 4. May require preparing a separate table for appetizers, beverages, and desserts.
_____ 5. Assemble an adequate supply of dishes and serving utensils.
_____ 6. Arrange the serving line.
_____ 7. Prepare steam tables and hot counters
_____ 8. Arrange plates of the same size in a row.
_____ 9. Set covers at each place along the counter.
_____ 10. Place guest plates at one end of the line.
_____ 11. May require preparation of appetizers, beverages, and desserts for serving at the guests' tables.
_____ 12. Group similar foods and containers together.
_____ 13. Wash dishes, glassware, flatware or serving utensils left from earlier shift.
_____ 14. May need to set individual covers on each dining room table.
_____ 15. Polish glass shelves, metal surfaces, and counter tops before serving hours.
_____ 16. Arrange menus, condiments, and napkins neatly on top of counter.
_____ 17. Replenish trays, napkins, and flatware.
_____ 18. Assemble relishes, condiments, and prepackaged food items in proper location.
_____ 19. Guest plates are placed at one end followed by cold dishes, main dishes, salads, and breads in the middle of the table.
_____ 20. Display hot foods, salads, desserts, breads, and beverages attractively.

## Foodservice Facilities

A. buffet
B. cafeteria
C. counter

## Activity 7-3 • Short Answer

**Directions**

To review the procedures for taking, relaying, and serving orders, complete the following statements. Use the spaces provided.

1. Describe three ways a foodservice employee may record a takeout order from a guest.
(A) ______
(B) ______
(C) ______

2. Explain three ways to relay a takeout order to the kitchen.
(A) ______
(B) ______
(C) ______

3. Outline four procedures a counter worker should follow when customers' orders are to be eaten at tables on the premises.
(A) ______
(B) ______
(C) ______
(D) ______

4. Describe two ways service personnel may serve some food items at a buffet.
(A) ______
(B) ______

5. Cafeteria counter workers should serve food in exact portions as directed. Identify two potential problems caused by incorrect portioning.
(A) ______
(B) ______

6. (A) Name the two types of cafeterias. (B) Describe the two types of cafeterias.
1. (A) ______
   (B) ______
2. (A) ______
   (B) ______

7. Name two methods of customer payment used by cafeterias.
(A) ______
(B) ______

# Activity 7-4 • Multiple Choice

**Directions**

For each method for displaying cafeteria foods, choose the best answer from the multiple choice list under each item. Place the appropriate letter in the blank to the left of the number.

____ 1. Should be overlapped:
A. desserts
B. garnishes
C. meat loaves
D. slices of meat

____ 2. Arranged to contrast in color:
A. desserts
B. garnishes
C. gelatin
D. salads

____ 3. Placed between lighter colored salads for color:
A. garnishes
B. gelatin
C. salads in bowls
D. sliced tomatoes

____ 4. Arranged among food:
A. desserts
B. garnishes
C. pie wedges
D. salads

____ 5. Using alternating rows of this with fruits or vegetables add variety in height and shape:
A. desserts
B. garnishes
C. gelatin
D. sliced tomatoes

____ 6. Grouped according to type:
A. desserts
B. garnishes
C. gelatin
D. light-colored salads

____ 7. Displayed so point faces customer:
A. gelatin
B. meat loaves
C. pie wedges
D. slices of meat

____ 8. A row of these can separate two rows of plates:
A. meat balls
B. salads in bowls
C. sliced tomatoes
D. slices of meat

____ 9. Should be placed in center of pan:
A. meat balls
B. meat loaves
C. salads
D. slices of meat

____ 10. Should be placed in straight rows:
A. garnishes
B. meat balls
C. meat loaves
D. slices of meat

## *Activity 7-5 • Short Answer*

**Directions**

**Read the following items and write your response in the space provided.**

1. Provide two reasons why it is important that everything behind the counter be kept spotless and neat at all times.

   (A) ____________________

   (B) ____________________

2. Describe one thing the foodservice employee should do and one thing the foodservice employee should not do when handling food.

   Should do: ____________________

   Should not do: ____________________

3. Write a paragraph expressing your view of the importance of sanitation for counter workers. Answers may include, but are not limited to, personal hygiene habits, handling both food and money, and using appropriate serving utensils for serving food.

# *Activity 7-6 • True/False*

**Directions**

**The following** exercise will help you describe procedures for packaging takeout orders and serving takeout customers. Answer the following statements by circling the **T** if the statement is **True** and **F** if the statement if **False.** If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Takeout orders may be a complete meal, a single item, or meal combination.

T F 2. Some seated-service restaurants and cafeterias offer takeout service along with table service.

T F 3. Many fast-food service operations feature takeout service.

T F 4. Supplies of disposables and prepackaged foods should never be restocked during serving hours.

T F 5. Takeout orders may be placed only at a drive up window or an automated ordering device.

T F 6. Repeat an order to the customer only if you are not sure it is correct.

T F 7. When packaging takeout orders, they should be wrapped, sacked, boxed, or placed in disposable containers.

## Activity 7-6 (continued) • True/False

T F 8. Include accompaniments such as salt, pepper, and sauces, in a takeout order only when a customer requests it.

T F 9. As a convenience to the customer, straws, napkins, and plastic utensils should always be provided in a takeout order.

T F 10. After the takeout counter worker has served the customer, he or she may add the sales check, collect the money, and then make change.

569

# Chapter 8

## Specialized Types of Foodservice

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 8:

- 4B Describe forms of service utilized in foodservice establishments for presenting food to guests.
- 7G Use appropriate terminology related to the food production and service industry.
- 9I Describe food production skills, procedures, and techniques utilized in catering and other specialized food production operations.
- 10E Perform appropriate tasks in foodservice according to industry standards.
- 10G Apply available technology in foodservice.

### Introduction

Most foodservice personnel are employed in restaurants. Others are employed in facilities that use specialized types of service. Some foodservice establishments provide facilities for serving large banquets, and some cater food for special functions. Foodservice units serving health care facilities use specialized systems to distribute food to patients and residents. Restaurants in hotels and motels usually provide room service to guests. Some restaurants use showmanship in preparing, decorating, displaying, and serving food. Each of these specialized types of foodservice require specially trained service personnel.

## *Activity 8-1 • Short Answer*

**Directions**

**Read the following** items and write your responses in the spaces provided.

1. Explain the proper time for beginning large banquet preparations. ______________________________

______________________________________________________________________

2. List the four things a customer must arrange for when planning a banquet.

(A) ______________________ (C) ______________________

(B) ______________________ (D) ______________________

3. (A) Identify the person(s) whose responsibility it is to set up the dining room for a banquet.

______________________________________________________________________

(B) Explain when this is done. ______________________________________________

4. Provide two reasons why seating arrangements for banquets should be carefully planned.

(A) ______________________________________________________________________

(B) ______________________________________________________________________

5. When arranging a room for a banquet, list the six criteria to keep in mind when setting up the tables.

(A) ______________________________________________________________________

(B) ______________________________________________________________________

(C) ______________________________________________________________________

(D) ______________________________________________________________________

(E) ______________________________________________________________________

(F) ______________________________________________________________________

6. Explain the reason for elevating the head table on a dais. ______________________________

______________________________________________________________________

7. List three tips for laying tablecloths.

(A) ______________________________________________________________________

(B) ______________________________________________________________________

(C) ______________________________________________________________________

8. Explain the reason(s) why individual covers should be laid in assembly line fashion when setting up banquet tables.

______________________________________________________________________

______________________________________________________________________

# Activity 8-2 • Illustrating

**Directions**

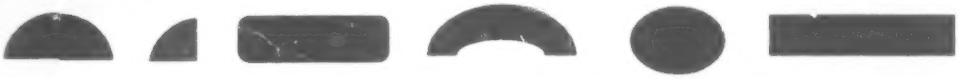
This activity will help to review procedures for room set-up for special occasions. You are planning and preparing for a special occasion. Complete the needed information in Part A and then, in Part B, sketch a table arrangement that will provide the proper accommodations.

(A) Choose the type of function by circling your choice. Then choose the type of service. The number of guests is provided for you. For this special occasion, you may choose to have a head table. If so, write the number of guests that will be seated at the head table in the blank provided.

Type of Function (circle one): Banquet Buffet Reception
Type of Service (circle one): Formal Informal
Number of guests: 60
Number of Guests at Head Table: ______

(B) In the space provided, sketch the table arrangement for the above function. Use the types of tables provided. Use more than one type of table in the arrangement. Each types of table may be used more than once.

**Types of Tables**



## Activity 8-3 • Matching

### Directions

Reinforce your knowledge of the two styles of service usually used at banquets by matching the style of service to the appropriate description. Place the letter of the style of service in the blank provided to the left of each description. Each letter may be used more than once.

### Styles of Service

A. American
B. Russian

### Descriptions

____ 1. Banquet service is elaborate and formal.
____ 2. Dinner plates are covered with metal covers.
____ 3. All cold foods are set on tables before the meal begins.
____ 4. Each guest is served individually.
____ 5. Food is brought into the dining room on silver platters.
____ 6. Covered plates are carried on large trays to tray stands.
____ 7. Dinner plates are on each guest's cover when table is set.
____ 8. Dishes are served and removed from the left.
____ 9. Metal covers are removed as plates are placed before the guests.
____ 10. Banquet tables are completely set in advance.

## Activity 8-4 • True/False

### Directions

Read the items listed below. If the item is **True**, circle the **T** to the left of the number. If the item is **False**, circle the **F**. If the statement is **False**, rewrite the statement making it a **True** statment.

T F 1. Banquet service is carefully coordinated so that courses are served by waitpersons as each guest is ready.

____________________________________________

____________________________________________

T F 2. The head table is usually served last.

____________________________________________

____________________________________________

T F 3. Buspersons may carry trays from the service area to the tray stand.

____________________________________________

____________________________________________

T F 4. Floaters are used to carry trays from the service room to the service stand.

____________________________________________

____________________________________________

T F 5. In banquet service each course is cleared by the buspersons and floaters at the same time.

____________________________________________

____________________________________________

## Activity 8-5 • Short Answer

**Directions**

Foodservice establishments often provide specialized types of foodservice. Complete the following chart to compare the procedures used by the specialized types of foodservice. Write your answers in the spaces provided.

| Specialized Service | Where is it prepared? | How is it assembled or packaged? | How is it transported? | How or where is it served? |
|---|---|---|---|---|
| **Catered Service** | | | | |
| **Hotel/Motel Room Service** | | | | |
| **Hospital Room Service** | | | | |
| **Car Service** | | | | |
| **Airplane Service** | | | | |

## Activity 8-6 • Short Answer

**Directions**

For the foods listed below, provide examples of how each can be used to exhibit food art. Use the spaces provided to write your responses.

1. Cakes:

2. Coffee:

3. Fruits and Vegetables:

4. Hors d'oeuvres:

5. Ice:

6. Japanese food:

7. Lobster:

8. Omelets:

9. Punch:

10. Steaks:

# Chapter 9

## The Check, Change, and Gratuities

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 9:

8G Practice effective management of resources.
7G Use appropriate terminology related to the food production and service industry.
10A Describe roles and responsibilities in foodservice operations.

### Introduction

The main purposes of a commercial foodservice establishment are to serve customers and to make a profit. Therefore, both human relations skills and mathematical skills are needed by almost every employee in a foodservice operation. The duties of a foodservice employee often include computing the check, presenting the check, handling money, and making change.

# *Activity 9-1 • Application*

**Directions**

**For each item** listed below, figure the sub total, figure the sales tax (use the tax rate of 8%), and check total for the following prices of menu items on guest checks. Round the sales tax up to the nearest penny.

| | 1. | 2. | 3. | 4. |
|---|---|---|---|---|
| | $ 3.95 | $ .99 | $ 14.90 | $ 3.15 |
| | .75 | .55 | 2.45 | 1.23 |
| | + 1.50 | + .45 | + 1.25 | + .64 |
| Sub Total | | | | |
| Sales Tax | | | | |
| Check Total | | | | |

| | 5. | 6. | 7. | 8. |
|---|---|---|---|---|
| | $ 2.75 | $ 11.42 | $ .42 | $ 1.24 |
| | 5.35 | 8.98 | 5.13 | .42 |
| | .75 | .69 | 7.45 | 3.13 |
| | + 1.20 | + .69 | + .56 | + .62 |
| Sub Total | | | | |
| Sales Tax | | | | |
| Check Total | | | | |

| | 9. | 10. |
|---|---|---|
| | $ 13.25 | $ 8.23 |
| | 10.15 | 7.59 |
| | 2.55 | 3.15 |
| | 1.00 | .58 |
| | + 1.00 | + .62 |
| Sub Total | | |
| Sales Tax | | |
| Check Total | | |

## Activity 9-2 • Application

**Directions**

**Complete** the following guest checks by filling in the totals for each item and then computing the subtotal, 8% sales tax, and total for each check.

1.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 101 | DATE 8/2 | SERVER 13 | TABLE NO. 5 |

| | | | |
|---|---|---|---|
| 2 | grilled cheese @ 2.25 | | |
| 1 | hot dog | 2 | 15 |
| 3 | milkshake @ 1.95 | | |
| 1 | French fries | | 95 |
| 2 | cola @ 1.25 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | | |
| | SALES TAX | | |
| | TOTAL | | |

2.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 102 | DATE 8/2 | SERVER 13 | TABLE NO. 6 |

| | | | |
|---|---|---|---|
| 1 | fried zucchini | 3 | 95 |
| 1 | chicken bits | 4 | 95 |
| 1 | prime rib | 19 | 95 |
| 2 | vegetable salad @ 1.75 | | |
| 2 | iced tea @ 1.25 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | | |
| | SALES TAX | | |
| | TOTAL | | |

3.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 103 | DATE 8/2 | SERVER 13 | TABLE NO. 7 |
| 2 | cheese omelets @ 3.99 | | |
| 1 | waffle | 2 | 95 |
| 1 | orange juice | | 95 |
| 2 | coffee @ 1.25 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | | |
| | SALES TAX | | |
| | TOTAL | | |

4.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 104 | DATE 8/2 | SERVER 13 | TABLE NO. 8 |
| 3 | turkey sandwich @ 2.75 | | |
| 1 | chef's salad | 3 | 25 |
| 2 | bowls soup @ 1.85 | | |
| 1 | side salad | 1 | 85 |
| 2 | iced tea @ 1.25 | | |
| 1 | cola | 1 | 25 |
| 1 | coffee | 1 | 25 |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | | |
| | SALES TAX | | |
| | TOTAL | | |

5.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 105 | DATE 8/2 | SERVER 13 | TABLE NO. 9 |
| 1 | beef enchiladas | 4 | 25 |
| 1 | chimichanga | 4 | 50 |
| 1 | soft tacos | 4 | 50 |
| 1 | cheese nachos | 2 | 75 |
| 1 | sopapillas | 2 | 35 |
| 3 | iced tea @ 1.25 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | | |
| | SALES TAX | | |
| | TOTAL | | |

**Directions**

Find the error(s) on each of the following guest checks. To make corrections, draw a line through each error and write the correct figure in the space provided to the right of the error.

1.

**The Rainbow Restaurant**
712 Pine

| | | | | | |
|---|---|---|---|---|---|
| CHECK NO. 106 | DATE 8/2 | SERVER 13 | TABLE NO. 7 | | |
| 1 | steak fingers | 4 | 40 | | |
| 1 | broiled flounder | 5 | 20 | | |
| 1 | spaghetti | 4 | 00 | | |
| 1 | chef's salad | 3 | 80 | | |
| 2 | vegetable salad @ 1.75 | 3 | 50 | | |
| 2 | iced tea @ 1.25 | 2 | 50 | | |
| 2 | milk @ .60 | 2 | 20 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | SUB TOTAL | 23 | 80 | | |
| | SALES TAX | 1 | 19 | | |
| | TOTAL | 24 | 99 | | |

2.

**The Rainbow Restaurant**
712 Pine

| | | | | | |
|---|---|---|---|---|---|
| CHECK NO. 107 | DATE 8/2 | SERVER 13 | TABLE NO. 8 | | |
| 1 | cheese omelet | 3 | 95 | | |
| 1 | pancake special | 2 | 95 | | |
| 1 | orange juice | | 65 | | |
| 1 | milk | | 60 | | |
| 2 | coffee @ 1.25 | 2 | 50 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | SUB TOTAL | 9 | 10 | | |
| | SALES TAX | | 46 | | |
| | TOTAL | 9 | 56 | | |

## Activity 9-3 (continued) • Application

3.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 108 | DATE 8/2 | SERVER 13 | TABLE NO. 9 |

| | | | |
|---|---|---|---|
| 1 | pepperoni pizza | 7 | 95 |
| 1 | spaghetti | 3 | 25 |
| 4 | vegetable salad @ 1.75 | 7 | 00 |
| 4 | cola @ 1.25 | 2 | 60 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | 20 | 80 |
| | SALES TAX | 2 | 08 |
| | TOTAL | 22 | 88 |

4.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 109 | DATE 8/2 | SERVER 13 | TABLE NO. 5 |

| | | | |
|---|---|---|---|
| 1 | Swiss steak | 6 | 75 |
| 1 | spinach salad | 1 | 85 |
| 1 | cheesecake | 2 | 15 |
| 1 | coffee | 1 | 25 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | 11 | 25 |
| | SALES TAX | | 56 |
| | TOTAL | 11 | 81 |

5.

**The Rainbow Restaurant**
712 Pine

| | | | |
|---|---|---|---|
| CHECK NO. 110 | DATE 8/2 | SERVER 13 | TABLE NO. 6 |

| | | | |
|---|---|---|---|
| 1 | hamburger | 2 | 95 |
| 1 | cheeseburger | 3 | 15 |
| 2 | French fries @ .95 | 1 | 95 |
| 2 | cola @ 1.25 | 1 | 35 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | SUB TOTAL | 9 | 40 |
| | SALES TAX | | 47 |
| | TOTAL | 9 | 87 |

## Activity 9-4 • True/False

**Directions**

**Read each** of the items below. If the statement is **True**, circle the **T** to the left of the item. If the statement is **False**, circle the **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Complete the check away from the serving area and then present it to the host.

T F 2. The Fair Labor Standards Act requires customers to leave a gratuity for the foodserver.

T F 3. Automatically charging a gratuity to the check of a large party is acceptable as long as that policy is stated on the menu. The foodservice employee should tell the customer before taking the order.

T F 4. Always present the check to a male, even if a female has indicated a desire to pay the check.

T F 5. Stand to the right of the customer when counting back change.

T F 6. The foodserver should let the customer know if they need to pay the cashier.

T F 7. When there are several checks for one table, stack the checks face down and leave them in the center of the table.

T F 8. When counting change back to the customer, count the large bills first.

T F 9. If the customer's change was checked for accuracy upon receiving it from the cashier, counting it again to the customer is unnecessary.

T F 10. If a mistake is made on a check, destroy the check and write a new one.

## *Activity 9-5 • Case Studies*

### Directions

**Read the case** studies below. Then answer the questions in the spaces provided.

### Case Study #

Lee is a foodserver in the Longshore Lunchroom. The group of people she served have just finished their meal. The group consists of three men and Lee cannot determine which member of the group is the host. Because she does not know who to present the check to, she is faced with a problem and desperately needs your advice. Please inform Lee as to where she should place the check.

### Case Study #2

Lonnie is a foodserver in a restaurant called the Lobster Landing. After serving dinner to a guest, Lonnie placed the check face down on the table to the guest's right. The guest thanked Lonnie, picked up the check, and walked toward the entrance. Lonnie had intended for the man to pay at the table. What caused the confusion?

### Case Study #3

Lauro has been waiting on a group of business people at The Lakeside Loft. Earlier in the evening, one of the women indicated to Lauro that she would be paying the check. Now that the group is finished with their meal, how and to whom should Lauro present the check? (NOTE: The payment procedure in this particular restaurant is through a cashier at the front of the restaurant rather than through the foodserver at the table.)

### Case Study #4

Lucy is a foodserver at the Lotus Flower Restaurant. When taking a customer's check and money to the cashier, Lucy checks the accuracy of the change by counting it aloud with the cashier. She then places the change on a check tray and takes it back to the customer. When she puts the tray on the table, Lucy thanks the guests and invites them to return. What step did Lucy forget? How could this be a potential problem?

### Case Study #5

Latticia serves breakfast at the Lucky Lady Coffeeshop. A customer stops her as she is headed for another table of customers and asks for the check. Latticia takes the guest check from her pocket and computes it while standing at the customer's table. What is a better method for computing the customer's check? Explain your answer.

## Activity 9-6 • Short Answer

**Directions**

**Read the following** items. Write your responses in the blanks provided.

1. Describe seven steps that should be followed when accepting a customer's credit card for payment of the check.

(A) ______

(B) ______

(C) ______

(D) ______

(E) ______

(F) ______

(G) ______

2. Describe the procedure for accepting payment of the check with a traveler's check.

______

3. List three points that help to ensure the foodservice establishment's effective control of personal checks.

(A) ______

(B) ______

(C) ______

# Activity 9-7 • Application

**Directions**

You are the cashier at The Rainbow Restaurant. When giving customers their change, you are to use the least possible number of coins. For each of the amounts listed below, put the number of coins needed in the blank to the right of the amount. In the parentheses, list the coins in the order you would count them back to a customer. An example is provided. NOTE: Do not use fifty-cent pieces.

**Example**

59¢ 7 (2 quarters + 1 nickel + 4 pennies)

1. 42¢ ______________ ( __________________________________________ )
2. 63¢ ______________ ( __________________________________________ )
3. 75¢ ______________ ( __________________________________________ )
4. 83¢ ______________ ( __________________________________________ )
5. 92¢ ______________ ( __________________________________________ )
6. 20¢ ______________ ( __________________________________________ )
7. 69¢ ______________ ( __________________________________________ )
8. 38¢ ______________ ( __________________________________________ )
9. 77¢ ______________ ( __________________________________________ )
10. 15¢ ______________ ( __________________________________________ )

# Activity 9-8 • Application

**Directions**

As the cashier at The Rainbow Restaurant, your job requires following the correct procedure for counting out change to a customer. For each item listed below, (A) write the amount of change due to the customer, (B) write the correct denomination needed to make the change, and (C) write how to count the change back to the customer. NOTE: Do not use fifty-cent pieces. An example is provided for you.

| Total Bill | Money Received | Change Due to Customer | Correct Change Given |
|---|---|---|---|
| **Example**<br>$1.25 | $ 2.00 | (A) $ .75 | (B) 3 quarters<br>(C) $1.25, $1.50, $1.75, and $ 2.00 |
| 1. $1.25 | $ 5.00 | (A) ______ | (B) ______<br>(C) ______ |
| 2. $1.79 | $ 2.00 | (A) ______ | (B) ______<br>(C) ______ |
| 3. $1.79 | $ 20.00 | (A) ______ | (B) ______<br>(C) ______ |
| 4. $ 2.35 | $ 3.00 | (A) ______ | (B) ______<br>(C) ______ |
| 5. $ 2.53 | $ 3.03 | (A) ______ | (B) ______<br>(C) ______ |
| 6. $ 5.18 | $ 6.03 | (A) ______ | (B) ______<br>(C) ______ |
| 7. $ 6.66 | $ 10.00 | (A) ______ | (B) ______<br>(C) ______ |
| 8. $ 6.66 | $ 7.16 | (A) ______ | (B) ______<br>(C) ______ |
| 9. $ 9.11 | $ 10.00 | (A) ______ | (B) ______<br>(C) ______ |
| 10. $ 4.57 | $ 20.00 | (A) ______ | (B) ______<br>(C) ______ |

**Directions**

Read the following items. Write your responses in the spaces provided.

1. Jacques is working the cash register during the noon rush. A customer hands Jacques a $10 bill to pay for food amounting to $3.53. Explain what Jacques should do with the $10 bill while he is counting out the customer's change.

2. Explain why the starting cash balance in the cash register is checked at the beginning of the day or shift.

3. Explain what the starting cash is used for.

4. Summarize the six steps that should be followed when closing the cash register at the end of the day or shift.
   (A)
   (B)
   (C)
   (D)
   (E)
   (F)

5. Describe how a cash register report is used to prove cash balance for the day.

## *Activity 9-10 • Application*

**Directions**

As a cashier in The Rainbow Restaurant, it is your responsibility to complete a cash register report. Use the form below to complete your report. Information, such as the number of coins and currency you had at closing time, cash paid out during the day, and so forth, is provided for you.

In the money drawer at the close of the day you have . . .

13 pennies; 7 nickels; 11 dimes; 12 quarters; 2 half dollars; 25 one-dollar bills; 22 five-dollar bills; 10 ten-dollar bills; 7 twenty-dollar bills; 3 checks totaling $62.23; 22 credit card slips totaling $303.94; cash paid out: $ 24.00; starting cash in drawer: $45.00; cash register tape total: $730.75

| **Cash Register Report** | ***The Rainbow Restaurant*** | |
|---|---|---|
| **Date:** | 712 Pine | |
| **Number of each Denomination** | **Denominations** | **Total** |
| | Pennies ($ .01) | |
| | Nickels ($ .05) | |
| | Dimes ($ .10) | |
| | Quarters ($ .25) | |
| | Half Dollars ($ .50) | |
| | One-dollar Bills ($ 1.00) | |
| | Five-dollar Bills ($ 5.00) | |
| | Ten-dollar Bills ($ 10.00) | |
| | Twenty-dollar Bills ($ 20.00) | |
| | Checks | |
| | Credit Card Slips | |
| | | |
| | Total in Cash Drawer | |
| | Cash Paid Out | |
| | Total Received | |
| | Starting Cash in Drawer | |
| | Total Receipts from Sales | |

Total from Cash Register Tape: ____________

Total Receipts from Sales: ____________

Cash Over: ____________

Cash Short: ____________

Signed ____________________________

# *Activity 9-11 • Application*

## Directions

(I) **Figure** a 15 percent gratuity for each of the following check totals. Using the blanks provided,
(A) use the fast and easy way to figure the gratuity at 15 percent as described in the readings, then
(B) use a calculator to calculate the gratuity.

| Total | A | B |
|---|---|---|
| 1. $ 15.00 | | |
| 2. $ 17.50 | | |
| 3. $ 12.24 | | |
| 4. $ 32.56 | | |
| 5. $ 6.46 | | |
| 6. $ 25.00 | | |
| 7. $ 42.75 | | |
| 8. $ 31.63 | | |
| 9. $ 11.11 | | |
| 10. $ 18.72 | | |

| Total | A | B |
|---|---|---|
| 11. $29.45 | | |
| 12. $46.50 | | |
| 13. $ 7.47 | | |
| 14. $19.66 | | |
| 15. $ 4.75 | | |
| 16. $23.23 | | |
| 17. $50.00 | | |
| 18. $21.01 | | |
| 19. $ 8.08 | | |
| 20. $32.00 | | |

(II) Compare your (A) and (B) calculations. Describe the accuracy of the fast and easy method.

## *Activity 9-12 • True/False*

**Directions**

Read each statement below. If the statement is **True**, circle the **T** to the left of the statement. If the statement is **False**, circle the **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Under the Fair Labor Standards Act, foodservice employees working in an establishment grossing more than $350,000 a year must be paid minimum wage.

T F 2. The amount of gratuity left for a foodservice employee can be influenced by the customer's attitude toward tipping.

T F 3. Foodservice workers receiving more than $40.00 in tips each month must file Form 4070, Employer's Report on Tips, with their employer.

T F 4. The service charge is an indiscriminate amount added to the customer's check by the management staff.

T F 5. The wage-hour law defines a tipped employee as one who regularly receives more than $20.00 a month in tips.

T F 6. Foodservice workers should inform customers as to what other customers have been tipping in order to stimulate competition among customers.

T F 7. If an employer collects all tips as part of the gross receipts, that employer must pay her/his employees the full minimum hourly wage.

T F 8. Foodservice employees should provide the same quality of service for non-tippers as they do for those who regularly tip.

T F 9. Foodservice employees are required by law to report the total amount of tips received on their federal income tax return.

T F 10. If an employer allows her/his employees to keep their tips, the amount of the tips can be deducted from their wages as long as the deducted amount does not exceed 25% of the minimum wage rate.

# Chapter 10

## Safe and Efficient Workplace Practices

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 10:

6A Summarize legislation, government regulations, and public policy affecting the food production and service industry.

6B Describe considerations regarding liability for injuries or damages to customers, employees, or facilities.

6C Interpret laws and policies pertaining to food production and service establishments.

7A Determine employer and employee responsibilities for workplace safety.

7B Evaluate regulations and standards guiding safety in the food production and service industry.

7C Identify major causes of accidents and ways to prevent them.

7F Analyze the division of workplace responsibilities.

7G Use appropriate terminology related to the food production and service industry.

### Introduction

Safety is essential in the foodservice facility. Government, foodservice management, and foodservice employees all contribute to the safety of a foodservice operation.

## *Activity 10-1 • Short Answer*

**Directions**

Read the items listed below. Write your responses in the spaces provided.

1. Name the three parties that contribute to the safety of foodservice operations.

(A) ____________________

(B) ____________________

(C) ____________________

2. Identify the three types of government that establish and enforce minimum safety standards in foodservice facilities.

(A) ____________________

(B) ____________________

(C) ____________________

3. Name three methods used to enforce safety standards regulations in foodservice facilities.

(A) ____________________

(B) ____________________

(C) ____________________

4. Explain the purpose of OSHA.

____________________

____________________

____________________

## Activity 10-2 • Short Answer

(A) Overall, who is responsible for safety in the foodservice facility?

______________________________

______________________________

(B) Both foodservice management and employees are responsible for ensuring a safe working environment. Complete the box below by listing the responsibilities for each position.

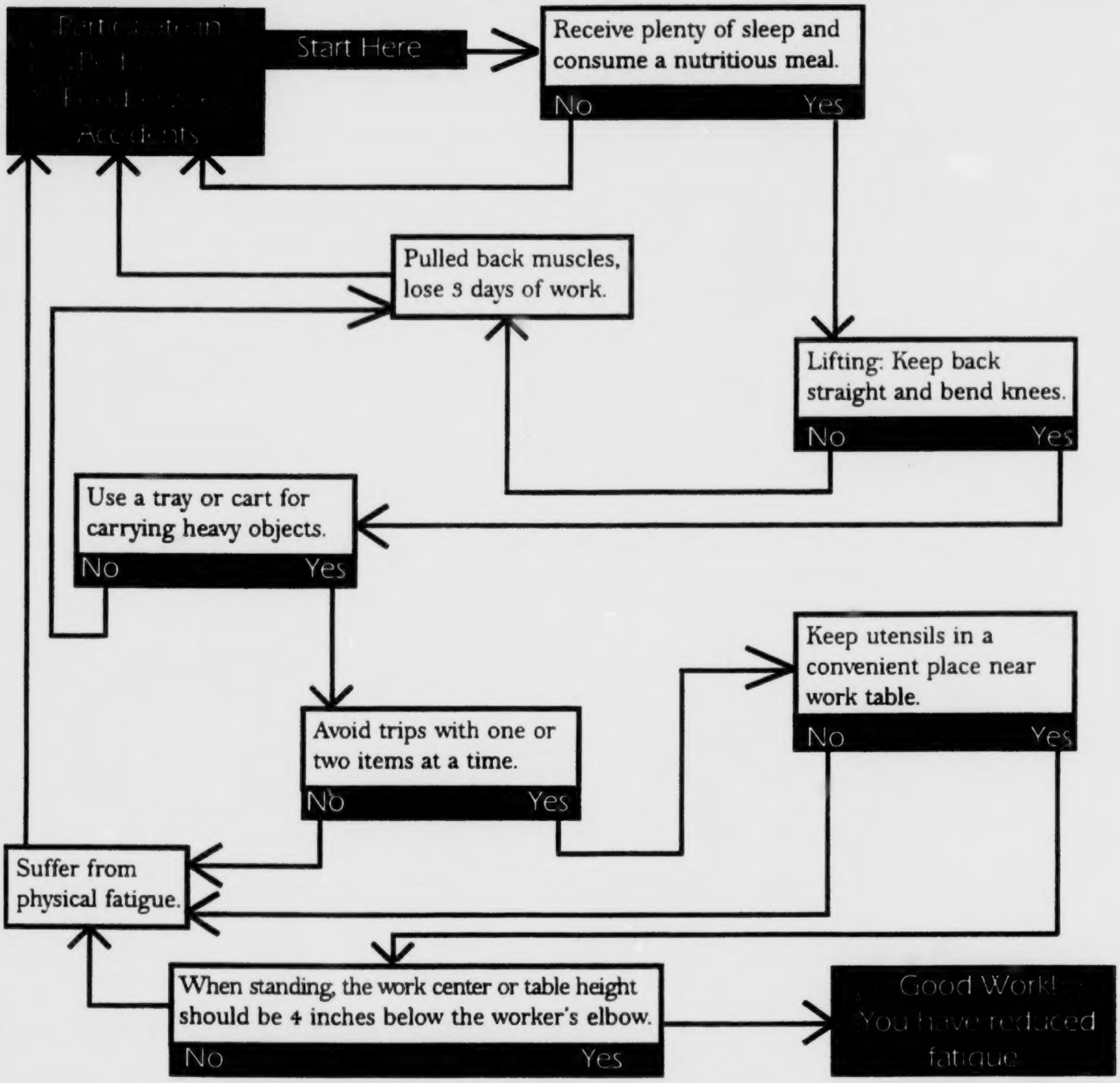
### Safety Obligations

| Management Responsibilities | Employee Responsibilities |
|---|---|
| 1. ______________<br>______________ | 1. ______________<br>______________ |
| 2. ______________<br>______________ | 2. ______________<br>______________ |
| 3. ______________<br>______________ | 3. ______________<br>______________ |
| 4. ______________<br>______________ | 4. ______________<br>______________ |
| 5. ______________<br>______________ | |

# *Activity 10-3 • Flow Chart*

**Directions**

Physical, mental, and emotional fatigue can result in accidents on the job. Using the flow chart below, follow the trail to reduce fatigue. If you take the best route for work simplification and fatigue reduction, you will reach the end of the trail. Good Luck! (Use a pencil or pen to trace your path).


Participate in
[illegible]
[illegible]
Accidents
Start Here
Receive plenty of sleep and consume a nutritious meal.
No
Yes
Pulled back muscles, lose 3 days of work.
Lifting: Keep back straight and bend knees.
No
Yes
Use a tray or cart for carrying heavy objects.
No
Yes
Keep utensils in a convenient place near work table.
No
Yes
Avoid trips with one or two items at a time.
No
Yes
Suffer from physical fatigue.
When standing, the work center or table height should be 4 inches below the worker's elbow.
No
Yes
Good Work! You have reduced fatigue

List five more ways to reduce fatigue.

1. ______________________________

2. ______________________________

3. ______________________________

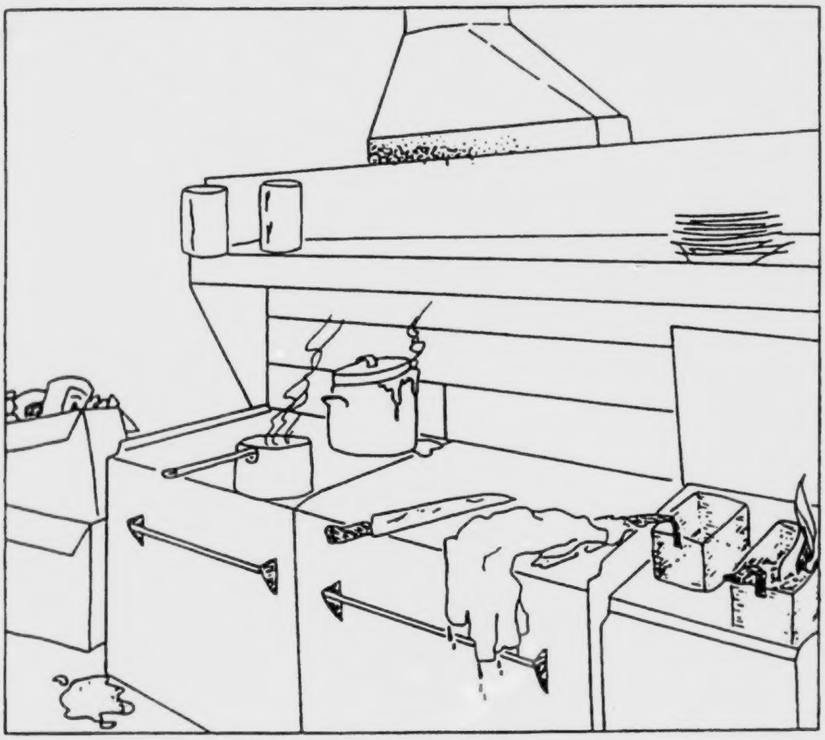
4. ______________________________

5. ______________________________

# Activity 10-4 • Identifying

## Directions

How do you rate as a safety inspector? In the illustration below, our inspector found 10 safety hazards and potential accidents. Circle all of the safety hazards and potential accidents that you can find. Then, in the blanks provided below the illustration, describe the potential hazard of each item you circled. When you have finished, count the total number of safety hazards and potential accidents you found and compare that number with the ratings in the Safety Inspector Ratings box. Good Luck!



1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________
10. ______________________________

## Safety Inspector Ratings

0-3: Oops! Go back and review this material again.
4-7: Good Work! You are on your way.
8 or more: Congratulations! You are a top-notch Safety Inspector.

# Activity 10-5 • Matching

## Directions

**Place the letter of each type of accident in the blank to the left of the safety procedure. Each letter may be used more than once.**

### Types of Accidents

A. burns
B. cuts
C. falls
D. fire and explosions
E. shock
F. strains and bruises

## Safety Procedures

_____ 1. Check pilot lights and all burners before lighting the range, oven, or other gas appliances.
_____ 2. Report any faulty electrical equipment promptly.
_____ 3. Never try to locate broken pieces of glass in dishwater. Drain the sink instead.
_____ 4. Turn pan handles away from the front of the range to prevent tipping.
_____ 5. Never leave hot fat unattended.
_____ 6. Wipe up spills immediately.
_____ 7. Never leave knives in a sink of water where they cannot be seen.
_____ 8. Be sure electrical cords are in good repair.
_____ 9. Do not overload food trays or carts.
_____ 10. Use thick, dry hot pads or mitts when handling hot pans and dishes.
_____ 11. Do not use knives for prying lids, opening cans, cutting paper and string, or sharpening pencils.
_____ 12. Strike the match before turning on the gas when lighting the oven.
_____ 13. Never handle electrical equipment with wet hands or while standing in water.
_____ 14. Keep knives sharp.
_____ 15. Get help to lift and carry heavy objects, such as large pots of food or bags of flour.
_____ 16. Pick up glass splinters with a damp paper towel and discard.
_____ 17. Correct or report floor hazards and obstructions.
_____ 18. If a knife falls, do not try to catch it. Get out of its way.
_____ 19. Discard chipped or cracked glasses and dishes.
_____ 20. Lift heavy objects by keeping the load close to the body. Lift with the legs, keeping the back straight.
_____ 21. Pull oven rack out, then remove container. Do not reach into oven.
_____ 22. Watch where you are going, especially when going through doors or around corners.
_____ 23. Wear rubber-soled leather shoes when working with foodservice equipment.
_____ 24. Never try to carry a burning pan to another location.
_____ 25. Walk, do not run.

# Activity 10-6 • Scenarios

## Directions

Preventing accidents means being aware of your surroundings and thinking about your actions. Read the following scenarios. Decide whether the situation would ultimately result in a fall, cut, burn, strain, or fire/explosion. Write your answer in the space provided. Next, explain what steps could be taken to prevent the potential accident.

1. Lorena, a kitchen worker, goes into the storeroom to get a large can of peaches. She sees that someone has placed the heavy cans on a top shelf.
   Accident: ______________________ Prevention: ______________________
   ______________________________________________

2. Roger is slicing deli meats. He removes the safety guard so that he can more easily see where the blade is set.
   Accident: ______________________ Prevention: ______________________
   ______________________________________________

3. A busperson, mopping up a spill at the entrance to the kitchen, leaves the mop propped against the wall.
   Accident: ______________________ Prevention: ______________________
   ______________________________________________

4. Frankie-Lee checks the steaming vegetables by lifting the cover toward her so that she can look into the pot.
   Accident: ______________________ Prevention: ______________________
   ______________________________________________

5. Herman is a cook at the Lunchbox Diner. He puts oil in a skillet, turns the burner on high, and then leaves the kitchen to get a bag of potatoes.
   Accident: ______________________ Prevention: ______________________
   ______________________________________________

6. Tyrone just finished slicing onions for the cooks' line. Without first cleaning his prep area, he takes the onions to the cooks.
   Accident: ______________________ Prevention: ______________________
   ______________________________________________

7. Two of the new waitstaff find it amusing to snap towels at each other when waiting for their food orders in the kitchen.

Accident: ______________________ Prevention: ______________________

______________________________________________________________

8. Heather wants to put a case of ketchup bottles on a storeroom shelf. She bends over the carton, keeping her legs straight, and grabs the case on two sides.

Accident: ______________________ Prevention: ______________________

______________________________________________________________

9. Tonya, a morning cook at the Omelet House Restaurant, is the first to arrive at the establishment. Entering the kitchen, she smells what she thinks might be gas.

Accident: ______________________ Prevention: ______________________

______________________________________________________________

10. Celina's bell-shaped sleeves continuously catch on the pot handles while she cooks.

Accident: ______________________ Prevention: ______________________

______________________________________________________________

# Chapter 11

## Emergency Procedures

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 11:

6B Describe considerations regarding liability for injuries or damages to customers, employees, or facilities.

6C Interpret laws and policies pertaining to food production and service establishments.

7A Determine employer and employee responsibilities for workplace safety.

7D Demonstrate emergency first aid procedures.

7E Follow employer policies for handling emergencies.

7G Use appropriate terminology related to the food production and service industry.

### Introduction

The foodservice establishment's safety instruction should include what to do in case of emergencies. Foodservice employees should know what to do in case of fire, severe weather, or a medical emergency. Emergency drills should be used to provide practice in reacting calmly to emergencies according to a set plan.

## *Activity 11-1 • Short Answer*

**Directions**

Answer the following items in the spaces provided.

1. Yokiko, a foodserver at the Lemongrass Restaurant, notices smoke pouring from a cleaning closet. List the steps that Yokiko should follow in reporting the fire.
   (A) ______________________________
   (B) ______________________________
   (C) ______________________________

2. Give two reasons why help should always be sought when a fire is detected.
   (A) ______________________________
   (B) ______________________________

3. How long should you wait before calling the fire department after a fire is detected? Explain your answer. ______________________________
   ______________________________

4. List two ways in which a fire can be reported.
   (A) ______________________________
   (B) ______________________________

5. (A) Where should the fire department telephone number be clearly posted?
   ______________________________
   (B) If it is not posted, where else can you find it quickly?
   ______________________________

6. List the information that should be given when reporting a fire.
   (A) ________________ (D) ________________
   (B) ________________ (E) ________________
   (C) ________________ (F) ________________

7. Why is it important for someone to wait nearby for the firefighters to arrive?
   ______________________________
   ______________________________

8. To put out a fire, one of the three essential ingredients must be removed. Name two of the three.
   (A) ______________________________
   (B) ______________________________

## Activity 11-2 • True/False

**Directions**

**Read the following statements.** Determine whether the statement is true or false. If the statement is **True** circle the **T** to the left of the statement. If the statement is **False**, circle the **F** to the left of the statement. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Foodservice establishments should have an evacuation plan in case of a fire.

________________________________________

T F 2. Because fire exits are rarely used, they provide an excellent place for storing equipment.

________________________________________

T F 3. Foodservice employees should know the procedures for manually turning on the range and hood fire extinguishing systems if they fail to come on automatically.

________________________________________

T F 4. When evacuating a building, save yourself - leave personal belongings behind.

________________________________________

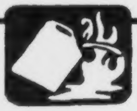
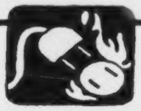
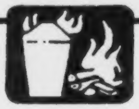
T F 5. When lives are involved, experienced firefighters welcome your help in getting people out of the burning buildings.

________________________________________

## Activity 11-3 • Pictograms

**Directions**

**Presented** below are pictograms illustrating the three types of fires. Follow these steps to complete the **box. Under each pictogram:** (A) label each pictogram as a Type A, B, or C fire; (B) list three examples **of the burning substances** (i.e., wood, oils, wiring); and, (C) give two methods for **extinguishing** or **containing** the fire.

| Pictogram |  |  |  |
|---|---|---|---|
| Type of Fire | (A) __________ | (A) __________ | (A) __________ |
| Burning Substances | (B) __________<br>__________<br>__________ | (B) __________<br>__________<br>__________ | (B) __________<br>__________<br>__________ |
| Methods to Extinguish or Contain Fire | (C) __________<br>__________ | (C) __________<br>__________ | (C) __________<br>__________ |

## *Activity 11-4 • Short Answer*

**Directions**

Read the following situations regarding fire safety. Determine whether the foodservice worker took the right or wrong action. Write your answers in the blanks provided and then explain your answer.

1. Anita finishes frying bacon strips for a customer's order. She places the bacon strips on a paper towel to drain, puts the frying pan back on the hot burner, and turns to put bread slices in the toaster. When she gets back to the frying pan, she sees that the grease is on fire. Quickly, Anita reaches for a nearby lid and covers the fire. Did Anita take the right or wrong action? Explain. ____________________

______________________________________________________________

______________________________________________________________

2. After removing the chicken casserole from the gas oven, Herman tosses the hot pads on top of the range. One of the pads lands on a lit burner and immediately bursts into flames. Herman grabs a dishtowel and throws it on the burning pad in an attempt to smother the fire. Did Herman take the right or wrong action? Explain. ______________________________

______________________________________________________________

______________________________________________________________

3. Tanya is a foodserver in a small diner. Her manager asks her to clean all of the ashtrays before taking her lunch break. Tanya empties the ashtray contents into a wastepaper basket filled with soiled paper napkins. Not realizing that one of the cigarette butts is smoldering, she is surprised when the basket contents begin to burn. She gets the nearby fire extinguisher and turns it on the fire. Did Tanya take the right or wrong action? Explain. ______________________________

______________________________________________________________

______________________________________________________________

4. Miguel, the owner of a local pizza restaurant, is using the food processor to chop vegetables for pizza toppings when he notices that the electrical outlet has caught fire. Going to the breaker box, Miguel turns off the breaker switch. Did Miguel take the right or wrong action? Explain. ____________________

______________________________________________________________

______________________________________________________________

5. Construction workers, hired to stain the wooden booths in the Garden Eatery Restaurant, have thrown the used oily rags in several small piles on the floor of a cleaning closet. Margaret is getting supplies from the closet when she smells smoke and sees that one pile of the rags has caught fire. She takes a broom to try and separate the burning rags before she alerts her manager. Did Margaret take the right or wrong action? Explain. ______________________________

______________________________________________________________

______________________________________________________________

## Activity 11-5 • Sentence Completion

**Directions**

**Complete** the following sentences by filling in the blank with the correct term.

1. One common source of information where foodservice managers can get up-to-the-minute severe weather reports is ______________________.

2. A three- to five-second, steady, high-pitched tone used in some areas to alert the public to fire or storms is a(n) ______________________.

3. When conditions are such that tornadoes could develop, the National Weather Service issues a tornado ______________________.

4. When a tornado has been sighted either visually or by weather radar, the National Weather Service issues a tornado ______________________.

5. During a tornado, foodservers should alert their customers and direct them to a safe place, such as ______________________.

## Activity 11-6 • Short Answer

**Directions**

**Answer** the following items in the spaces provided.

1. List four common medical emergencies that could affect foodservice establishments.
   (A) ______________ (C) ______________
   (B) ______________ (D) ______________

2. Name the person to whom all on-the-job accidents should be reported first.
   ______________________

3. (A) What is OSHA?______________________
   (B) Explain the purpose of OSHA. ______________________
   ______________________

4. Choking forcefully is one way a foodservice worker can determine that a person is the victim of choking. List three other signs of choking.
   (A) ______________ (C) ______________
   (B) ______________

## *Activity 11-7 • Short Answer*

**Directions**

**Complete** the box below by naming the two procedures used to dislodge a foreign body that is causing a person to choke. Next, write the instructions that should be followed for each procedure on a conscious victim.

**Procedure #1**

**(A).** ______________________

**Instructions**

**(B).** ______________________

**Procedure #2**

**(A).** ______________________

**Instructions**

**(B).** ______________________

## Activity 11-8 • Case Studies

**Directions**

**Read the** case studies below and answer the questions in the blanks provided.

1. Harry, an employee of Marie's Cafeteria, cut himself with a knife while washing dishes in the sink. His wound seems to be minor. How should he treat it?

2. Emile, an employee of Cindy's Eatery, fell off a chair while reaching for the flour on the top shelf. He bruised his chin and blackened his eye with the fall. How should he treat his injuries?

3. Stella, an employee of Stanley's Steak House, cut her hand severely while carving meat. Her hand is bleeding very badly. What should she do?

4. Ashante used hot pads instead of oven mitts to remove a casserole from the oven. He accidentally hit his left hand on the top rack when bringing the dish out of the oven. How should Ashante treat his burn?

5. During the lunch rush at Carol's Coffee Cup, Herman trips and falls when running to the kitchen to pick up an order. His ankle immediately begins to swell and hurt. What should Herman do?

## *Activity 11-9 • Short Answer*

### Directions

Complete the Classification of Burns box illustrated below by placing together the type of burn with the description of the burn and the proper treatment for the burn. Use the information provided below to fill in the boxes. Each listing will be used only once.

### Types, Descriptions, and Treatments of Burns

- Cover entire area with a dry, sterile dressing
- First-degree burn
- Place under cold water
- Place under cold water and cover with dry, sterile dressing
- Second-degree burn
- Skin partly destroyed, charring present
- Skin reddened, blisters formed
- Skin reddened but unbroken
- Third-degree burn

### Classification of Burns

| **(A) Type** | **(B) Description** | **(C) Treatment** |
|---|---|---|
| | | |
| | | |
| | | |

# Chapter 12

## Employee, Equipment, and Facility Sanitation

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 12:

6C Interpret laws and policies pertaining to food production and service establishments.

7B Evaluate regulations and standards guiding safety in the food production and service industry.

7G Use appropriate terminology related to the food production and service industry.

8A Comply with government regulations and policies that apply to food safety and sanitation techniques utilized in food production and service.

8B Practice correct sanitation procedures in food production and service operations.

8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.

8F Maintain acceptable standards in employee grooming, health, and hygiene.

8H Describe environmental factors affecting safe food production.

11H Implement quality assurance standards in all aspects of the food production and service industry.

### Introduction

Sanitation involves the creation and maintenance of conditions favorable to good health. To avoid health hazards in foodservice establishments, personnel, equipment, and facilities must be both clean and sanitary. Clean means absence of visible soil. Sanitary means free of harmful microorganisms and other harmful substances. In health care facilities, the term aseptic, meaning free from disease-producing microorganisms, is used to refer to the extremely clean conditions which must be maintained.

The main purpose of maintaining sanitary conditions in foodservice establishments is to serve food that is free of contamination, which means contact that makes something unclean and unsuitable for use. Contaminated food contains disease-producing organisms. Standards for sanitation in foodservice apply to personnel, equipment, facilities, the food supply, and the handling of food. Sanitation standards for food handling are discussed in chapter thirteen.

## *Activity 12-1 • Matching*

### Directions

**Listed below are** common terms used in foodservice establishments. Match the term in column B with the **phrase** in column A that best describes it. Each letter may be used once, more than once, or not at all.

### Column A

____ 1. Absence of visible soil

____ 2. Contact that makes something unclean and unsuitable for use

____ 3. Free of harmful microorganisms and other harmful substances

____ 4. Involves the creation and maintenance of conditions favorable to good health

____ 5. Laws used in foodservice establishments to protect the consumer

____ 6. Refers to the extremely clean conditions necessary in health-care facilities

____ 7. State or local government representative who makes inspections of foodservice facilities

____ 8. Laws that state standards for sanitation in foodservice establishments.

____ 9. Free from disease-producing microorganisms

____10. Transfer of harmful microorganisms from one food to another

### Column B

A. aseptic
B. clean
C. contaminants
D. contamination
E. cross-contamination
F. sanitarian
G. sanitary
H. sanitary codes
I. sanitation

## Activity 12-2 • True/False

**Directions**

Read the following statements. If the statement is **True**, circle the **T** to the left of the statement. If the statement is **False**, circle the **F** to the left of the statement. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Sanitizing glasses, dishes, and flatware replaces the need for dishwashing.

T F 2. Removable parts of stationary equipment should be disassembled and washed by hand.

T F 3. Separating wiping cloths used for food contact surfaces of equipment from other wiping cloths prevents cross-contamination.

T F 4. Food contact surfaces of equipment need only to be washed and rinsed with soap and water.

T F 5. Cleanliness is necessary to preserve the appearance of furniture.

T F 6. To reduce breakage, dishes should be placed in a separate pan from silverware when being removed from a table.

T F 7. Table tops and counters should be cleaned with a sanitizing solution once a week.

T F 8. Windows, shelves, and glass counters should be kept clean to prevent the growth of bacteria.

T F 9. A plate that appears clean is sanitary.

T F 10. It is necessary to unplug electrical equipment before cleaning.

## *Activity 12-3 • Sentence Completion*

**Directions**

Complete the following sentences by placing the correct response(s) in the blanks provided.

1. Maintaining a clean and germ-free environment for food production is referred to as ______________________.

2. Food that has come into contact with harmful organisms or substances is ______________________.

3. The most common source of food contamination is (are) ______________________.

4. The spread of bacteria from meats to other foods is referred to as ______________________.

5. The bacteria which are present on your skin, in your mouth and throat, and in some infected sores is called ______________________.

6. Two types of bacteria found in the intestines of humans are ______________________ and ______________________.

7. The foodservice worker's best defense against contamination is ______________________.

8. Daily bathing reduces the number of ______________________ on the skin.

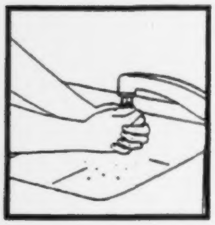
9. Cleanliness practices, such as bathing, cleaning teeth, fingernails, and hair, and wearing clean clothing, are referred to as ______________________.

C11

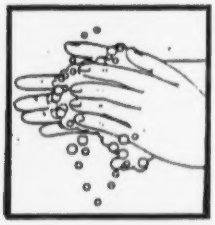
# Activity 12-4 • Pictograms

**Directions**

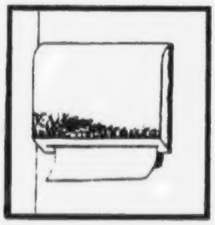
**Below are** pictograms that illustrate the six steps in proper hand washing. The pictograms are not in the correct order. First, place the number of the step in the appropriate blank. Then, use the blanks provided to describe the step shown in the pictogram.



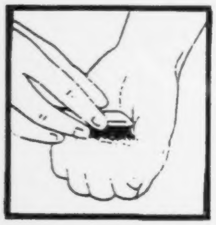
(A) Step # ____________



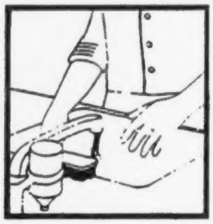
(B) Step # ____________



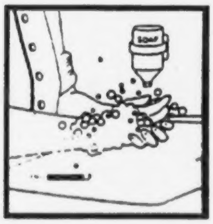
(C) Step # ____________



(D) Step # ____________



(E) Step # ____________



(F) Step # ____________

## *Activity 12-5 • Short Answer*

### Directions

(A) **Complete** the box below by listing the six steps used for hand dishwashing.

### Steps for Hand Dishwashing

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

(B) Respond to the following questions regarding hand dishwashing procedures.

1. Why should the sinks and work surfaces be cleaned before washing dishes? ______________________________

2. What are the two processes in dishwashing ?
   (A) ______________________________
   (B) ______________________________

3. What is the correct water temperature for the wash water? ____________ °F
   Rinse water? ____________ °F Sanitizing water? ____________ °F

4. Why is sanitizing necessary? ______________________________

5. What two liquids comprise a sanitizing solution? ______________________________

6. Why are sanitized items air dried? ______________________________

7. What are the most common chemical sanitizers? ______________________________

# *Activity 12-6 • Short Answer*

**Directions**

**Respond** to the following items using the spaces provided.

1. Name two types of dishwashing machines.

(A) ________________ (B) ________________

2. Compare the methods of operation between the two types of dishwashing machines listed in item #1.

3. Describe the correct procedure for loading each of the following in a dishwashing machine.

- Glassware: ________________
- Tableware: ________________
- Flatware: ________________

4. Name the three most important concerns in operating the dish machine.

(A) ________________

(B) ________________

(C) ________________

5. Explain how cross-contamination can occur during the dishwashing operation in a foodservice establishment.

## Activity 12-7 • Short Answer

**Directions**

Complete the box by describing the floor finishes and giving the required care.

| Floor Finishes | Description | Care Required |
|---|---|---|
| **Asphalt Tile** | | |
| **Carpet** | | |
| **Ceramic Tile** | | |
| **Rubber Tile** | | |
| **Vinyl Tile** | | |

# Activity 12-8 • Matching

## Directions

Listed below are four types of disease-carrying pests found in foodservice establishments. Read the following pests characteristics. Match the pest with the corresponding characteristics by placing the letter of the pest in the blank provided to the left of the item. Each letter may be used more than once.

## Disease-carrying Pests

A. ants
B. cockroaches
C. flies
D. pantry pests

## Pest Characteristics

_____ 1. Attracted to sweets and fats such as syrup and fried foods.

_____ 2. Includes bran beetles, weevils, hide and larder beetles, cereal mites, flour and meal moths, silverfish, and firebrats.

_____ 3. Known carriers of salmonella.

_____ 4. Spit up a stomach fluid to dissolve its solid food.

_____ 5. Leave signs such as stains from their droppings, a musty odor, or empty egg cases.

_____ 6. Spread germs by carrying filth and food waste on their legs and bodies.

_____ 7. Leave signs such as webbing, clumped food particles, holes in food, or holes in packaging.

_____ 8. Transmit human disease such as typhoid, dysentery, infantile diarrhea, streptococcal and staphylococcal infections.

_____ 9. Sensitive to light and feeds on contaminated materials in the dark.

_____ 10. Spread germs from their body wastes, from their feet and hairy legs, and in their manner of eating.

# Activity 12-9 • Short Answer

**Directions**

**Read the following** items and respond in the spaces provided.

1. Name one way in which rats and mice transmit disease.

   ________________________________________

2. Identify one type of disease transmitted by rats and mice.

   ________________________________________

3. Name one type of bird that can be a pest to the foodservice establishment.

   ________________________________________

4. Describe one way in which birds are problems in sanitation.

   ________________________________________

5. Identify one human disease carried by birds.

   ________________________________________

6. Provide five ways a foodservice establishment can remain free of pests.

   (A) ____________________________________

   (B) ____________________________________

   (C) ____________________________________

   (D) ____________________________________

   (E) ____________________________________

# *Activity 12-10 • Short Answer*

**Directions**

**The situations** below involve food sanitation practices. Some of the situations are safe, some could be made safer. If the situation is safe, put a "✓" in the space provided by "No Change Needed." If the situation is unsafe, explain why it is unsafe by writing your response in the blanks provided.

1. Chuck works as a cook at the Great Wrap Deli. During slow times, he steps out back and smokes a cigarette. As his manager, you see that he is not washing his hands before returning to the line to prepare dishes. No Change Needed ______

   ________________________________________

   ________________________________________

2. Josefina, a kitchen helper, is trimming raw poultry breasts when her supervisor instructs her to prepare a tub of salad. Josefina puts the chicken on a plate and gathers the salad ingredients, neglecting to wash down the preparation area. No Change Needed ______

   ________________________________________

   ________________________________________

3. Suzanne is cleaning the storeroom when she finds what looks like mice droppings. She is unconcerned, however, because she likes mice - having three as pets. No Change Needed ______

   ________________________________________

   ________________________________________

4. Chang, a dishwasher for a small restaurant, often works alone during the week so he is expected to work quickly. When soiled plates are brought to him, Chang saves time by using his hands to scrape any uneaten food into the trash. He then sends the dishes through the dishwashing cycle, meets them on the opposite end, and stacks and carries them to the cooks' line. No Change Needed ______

   ________________________________________

   ________________________________________

5. When Larry makes country gravy for the Good Morning Café, he conducts frequent taste tests for needed seasonings by dipping his finger into the gravy. All the customers at the Good Morning Café rave about Larry's country gravy. No Change Needed ______

   ________________________________________

   ________________________________________

# Chapter 13

## Food Safety and Sanitation Techniques

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 13:

- 6C Interpret laws and policies pertaining to food production and service establishments.
- 7B Evaluate regulations and standards guiding safety in the food production and service industry.
- 7G Use appropriate terminology related to the food production and service industry.
- 8A Comply with government regulations and policies that apply to food safety and sanitation techniques utilized in food production and service.
- 8B Practice correct sanitation procedures in food production and service operations.
- 8C Describe foodborne illnesses, their causes, and prevention methods.
- 8D Explain the implications of temperature on the storage, preparation, handling of food.
- 8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.
- 8G Utilize procedures that protect the environment.
- 8H Describe environmental factors affecting safe food production.
- 11H Implement quality assurance standards in all aspects of the food production and service industry.

### Introduction

Food becomes hazardous to health if it is infected with harmful microorganisms, chemicals, or physical hazards. These hazards can be avoided by sanitary food handling.

To reduce the effects of contamination, the growth of microorganisms must be slowed or stopped by refrigeration or the microorganisms must be destroyed by sufficient heat. At temperatures between 41° F and 140° F (5° to 60° C), microorganisms grow and multiply greatly in a very short time. To prevent microorganisms from growing and multiplying, food must be kept out of the food danger zone.

# *Activity 13-1 • Matching*

## Direction

**Match the food sanitation terms with the corresponding characteristics by placing the letter in the space provided to the left of the numbered item. Each letter may be used once or not at all.**

## Characteristics

_____ 1. A disease caused by eating food that contains harmful microorganisms.

_____ 2. Tiny living cells that are found in our bodies, in the soil, in the water, and in the air.

_____ 3. The creation and maintenance of conditions favorable to good health.

_____ 4. Cause colds and influenza.

_____ 5. Poisons contained in foods that either occur naturally or are produced by certain microorganisms.

_____ 6. A disease that is carried or transmitted to people by food.

_____ 7. Small, single-celled organisms that can live anywhere people can.

_____ 8. A parasite found in undercooked pork.

_____ 9. Examples are pesticides and toxic metals.

_____ 10. An illness caused by poisons or toxins in the food a person eats.

## Terms

A. bacteria
B. chemical hazards
C. critical control points
D. foodborne illness
E. foodborne infection
F. foodborne intoxication
G. fungi
H. microorganisms
I. sanitation
J. toxins
K. Trichinella
L. viruses

**Directions**

**Read each** statement. If the statement is **True**, circle the **T** to the left of the statement. If the statement is **False**, circle the **F** to the left of the statement. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. The time-and-temperature principle means to keep hot foods hot and cold foods cold.

T F 2. Extended holding of hot foods increases the risk of promoting bacterial growth.

T F 3. The dangerous temperature zone for bacterial growth in foods is between 50° F and 150° F.

T F 4. Human saliva contains bacteria so it is necessary to avoid licking fingers during food preparation.

T F 5. Refrigeration kills bacteria.

T F 6. Freezing prevents the growth of molds by killing those that are already present in foods.

T F 7. Contaminated foods can appear to be safe.

T F 8. Knives and cutting boards can be used for both raw and cooked meats as long as they are wiped off in between use.

T F 9. Sneeze guards placed on self-help salad bars are used to visually enhance the appeal of the foods.

## Activity 13-2 (continued) • True/False

T F 10. Cooked, perishable leftovers should be chilled to a safe temperature (45°F) in less than four hours.

______________________________________________

T F 11. Pesticides are a form of chemical hazards that can contaminate food.

______________________________________________

T F 12. If a hot food is kept "piping hot" under a heat lamp, one can be confident that it is safe.

______________________________________________

T F 13. The Pork Producers Council recommends cooking pork to an end temperature of 160°F (medium) and 170°F (well done).

______________________________________________

T F 14. The "feel" of the container is sufficient to test the temperature of foods.

______________________________________________

T F 15. Leftover puddings can be mixed with fresh portions to avoid wasting food.

______________________________________________

T F 16. Food-contact surfaces of equipment should be cleaned and sanitized after every use.

______________________________________________

T F 17. Physical hazards are incidents in which food is contaminated because of careless foodservice workers.

______________________________________________

T F 18. Uncovered meats can become poisoned through contact with refrigerator shelves containing cadmium.

______________________________________________

T F 19. A critical control point is frequently stated as a temperature range or a time limit.

______________________________________________

T F 20. HACCP is a process used to prevent foodborne illness.

______________________________________________

# Activity 13-3 • Scenarios

## Directions

The following case scenarios involve foodborne illnesses. Read the scenarios. Identify the bacteria responsible for the illness and write the name of the bacteria in the space provided. Explain your answer. Next, provide a related method of food safety which will help to avoid this type of foodborne illness.

1. Sara hosted a Thanksgiving dinner at her home. After everyone had eaten, the guests adjourned to the living room to watch the football game and enjoy after-dinner coffee and dessert. Sara left the remaining turkey, gravy, and stuffing to cool on the counter before placing it in the refrigerator; she knew that the refrigerator would have to work harder if she put the foods in while still hot. Six hours later, Sara put the cooled turkey, gravy and stuffing into covered bowls and placed them in the refrigerator. The next day at lunch, her husband made himself a hot turkey sandwich using the leftover foods. About 2:00 AM the following morning, Sara woke to her husband's complaints of cramping and diarrhea. He was not vomiting, nor did he seem to have a headache.

   Bacteria: ____________________ Explain your answer: ____________________

   ________________________________________

   Food safety method: ________________________________________

   ________________________________________

2. Every Saturday afternoon, Margarite and her two young sons gather in the kitchen and make a special treat. One afternoon, the boys wanted chocolate chip cookies. Margarite gathered the supplies and her sons helped her with the measuring and mixing. After mixing in the raw eggs, sugars, and oil, it was time for the chocolate chips. The boys dumped the chips into the batter and mixed them in. Margarite got the cookie sheets and allowed her sons to place teaspoonfuls of cookie dough on the sheets. The boys ate one teaspoon of cookie dough for every teaspoon that went on the cookie sheet. When the batch of cookies were done baking, the boys were so full from eating cookie dough that they declined from eating any cookies that evening. The following morning, both boys were vomiting and had diarrhea and chills. Thinking they were coming down with the flu, Margarite took them to their family physician.

   Bacteria: ____________________ Explain your answer: ____________________

   ________________________________________

   Food safety method: ________________________________________

   ________________________________________

## Activity 13-3 (continued) • Scenarios

3. After school, Jason and his friends stopped at a local fast food establishment for hamburgers. Jason's burger appeared not to be cooked thoroughly as the meat was pink in the middle. But, it tasted fine so Jason had no problem finishing the entire hamburger. The next morning, Jason stayed home from school complaining of abdominal pain and vomiting. By that evening, Jason was experiencing severe abdominal pain and bloody diarrhea. Alarmed by Jason's symptoms, his parents took him to the hospital.

Bacteria:________________ Explain your answer: ________________

________________________________

Food safety method:________________________________

________________________________

4. On Sunday morning at 9:00 AM, Hubert took his wife and two children to breakfast at the Desert Coffee Shop. The foodserver took their orders and gave the food ticket to the cook. While preparing the eggs, the cook sneezed over the eggs frying in the pans. He took time out to get a tissue for his nose and to wash his hands before arranging the breakfast plates for delivery to Hubert and his family. After eating breakfast, the family went to the mall to do some shopping. Around 2:00 PM that afternoon, Hubert experienced some nausea and his two children began vomiting.

Bacteria: ________________ Explain your answer: ________________

________________________________

Food safety method: ________________________________

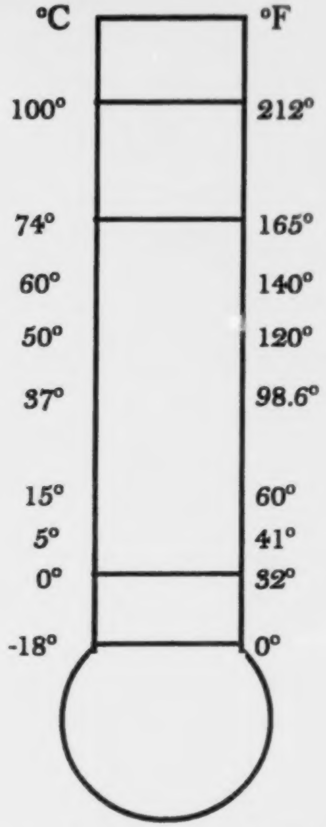
________________________________

# Activity 13-4 • Short Answer

**Directions**

(A) **Using** the Food Safety Thermometer pictured below, label the following areas and mark them by shading with colored pencils, crayons, or markers.

**Food Safety Thermometer**



**Labels**

1. Danger Zone for bacterial growth
2. Freezer temperatures
3. Cooking and food holding temperatures
4. Refrigerator temperatures
5. Freezing point

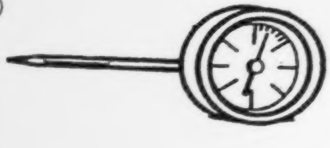
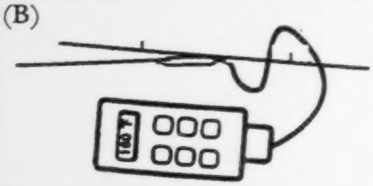
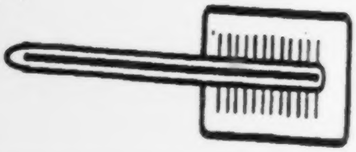
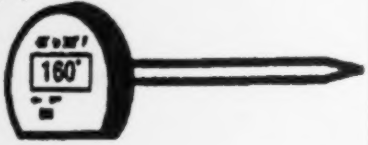
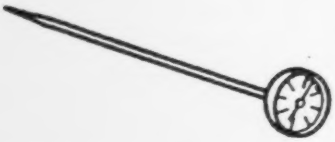
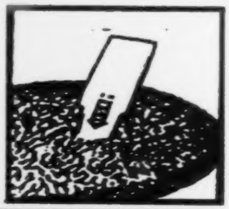
(B) Answer the following questions by placing your response in the space provided.

1. Above 140°F bacteria survive but do not grow. What other temperature inhibits bacterial growth?
2. What is the boiling point of water?
3. At what temperature do some bacteria produce toxins?
4. What is the time span for safely holding foods at the Danger Zone temperature range?
5. The time-and-temperature principle, simply stated, means what?

## *Activity 13-5 • Short Answer*

### Directions

**Complete the boxes below by furnishing the following information: (1) identify the type of thermometer; (2) give the speed at which the temperature can be read; (3) describe where the thermometer should be placed in the food product; and, (4) provide three considerations for usage.**

| | Type | Speed | Placement | Usage |
|---|---|---|---|---|
| (A)  | | | | |
| (B)  | | | | |
| (C)  | | | | |
| (D)  | | | | |
| (E)  | | | | |
| (F)  | | | | |

## Activity 13-6 • Short Answer

**Directions**

**Read the following** items and write your responses in the blanks provided.

1. Name the two types of chemical hazards.

(A) ______________________________

(B) ______________________________

2. Identify five ways in which the foodservice manager can help prevent pesticide contamination in the food supply.

(A) ______________________________

(B) ______________________________

(C) ______________________________

(D) ______________________________

(E) ______________________________

3. Identify IPM. ______________________________

Define its purpose. ______________________________

______________________________

4. Other than pesticides, name three other chemicals found in foodservice establishments that are poisonous to humans.

(A) ______________________________

(B) ______________________________ (C) ______________________________

5. Provide one example of how poisoning can result from foods coming into contact with metals.

______________________________

6. Identify the HACCP system. ______________________________

Define its purpose. ______________________________

______________________________

7. Identify CCP. ______________________________

Explain their use in the HACCP system. ______________________________

______________________________

8. A HACCP Flow Chart lists potential hazards related to food handling. Name three other criteria found in a HACCP Flow Chart.

(A) ______________________________

(B) ______________________________ (C) ______________________________

# Chapter 14

## Nutrition Matters

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 14:

7G Use appropriate terminology related to the food production and service industry.

9G Apply nutrition principles to planning, preparation, and presentation for food product operations.

### Introduction

Some foodservice operations are more concerned with nutrition than others. Health care facilities, schools, and residence facilities are responsible for meeting the nutritional needs of customers as opposed to institutional foodservice operations. However, some commercial restaurants are now including items which appeal to persons concerned about nutrition, especially to those on a weight-loss diet. Regardless of the menu, all foodservice establishments should prepare and serve food in a way that retains nutrients.

## Activity 14-1 • Short Answer

**Directions**

**Answer** the following items in the spaces provided.

1. List three needs that food meets for people.
   (A) ______________________________
   (B) ______________________________ (C) ______________________________

2. List three ways in which the body utilizes food.
   (A) ______________________________
   (B) ______________________________ (C) ______________________________

3. Identify four factors that affect eating habits.
   (A) ______________________________ (C) ______________________________
   (B) ______________________________ (D) ______________________________

## Activity 14-2 • Sentence Completion

**Directions**

**Complete** the items below by placing the best response in the blanks provided.

1. Sugars, starches, and cellulose are three types of ______________________.

2. Chemical substances found in foods, each having a specific function in the body, are called ______________________.

3. For study, play, and work, the foods you eat provide your body with ______________________.

4. Measurements of the amounts of energy produced when foods are burned in the body are ______________________.

5. Saturated fats have high levels of dietary ______________________.

6. The essential nutrient that provides growth, repair, and maintenance of the body is ______________________.

7. Foods containing adequate amounts of all nine essential amino acids are considered to be ______________________ proteins.

## *Activity 14-2 (continued) • Sentence Completion*

8. Dry beans and peas, grains, and vegetables are examples of ____________________ proteins.

9. Providing energy for the body's activities is the main function of ____________________.

10. In the *Food Guide Pyramid,* cakes and cookies are referred to as ____________________ foods.

11. Water is an important mineral for many reasons. The average person needs to drink ____________________ glasses of water each day.

12. Nutritionists recommend that adults limit their fat intake to ____________________ percent of total daily calories.

13. Of the total calories a person consumes, nutritionists recommend that ____________________ percent come from complex carbohydrates.

14. Calcium and phosphorus are two of the most important ____________________.

15. Vitamins that cannot be stored in the body are ____________________ vitamins.

16. Citrus fruits, such as oranges and grapefruits, are the best sources for ____________________.

17. When cooking green vegetables, baking soda is NOT added because it destroys the ____________________ vitamins.

18. A tool in which foods are grouped into categories and used in helping people make healthy food choices is the ____________________.

19. The food group from which you need the MOST servings each day is the ____________________ group.

20. Breakfast should supply ______________ of the day's nutrients.

## *Activity 14-3 • Short Answer*

**Directions**

Complete the box below by: (A) identifying the listed nutrient as a mineral or a vitamin; (B) providing the function of the mineral or vitamin in the body; and, (C) listing two food sources of the mineral or vitamin.

| Nutrient | (A) Mineral or Vitamin? | (B) Function | (C) Food Sources |
|---|---|---|---|
| A | | | 1. ____________<br>2. ____________ |
| C | | | 1. ____________<br>2. ____________ |
| Calcium | | | 1. ____________<br>2. ____________ |
| Iodine | | | 1. ____________<br>2. ____________ |
| D | | | 1. ____________<br>2. ____________ |
| Magnesium | | | 1. ____________<br>2. ____________ |
| Iron | | | 1. ____________<br>2. ____________ |
| Phosphorus | | | 1. ____________<br>2. ____________ |
| E | | | 1. ____________<br>2. ____________ |
| K | | | 1. ____________<br>2. ____________ |

## Activity 14-4 • Matching

**Directions**

**Match the essential nutrients in the right column to the description in the left column. Place the letter of the appropriate essential nutrient in the blank provided to the left of the description. Each letter may be used more than once.**

**Essential Nutrients**

A. carbohydrates
B. fat
C. protein

**Descriptions**

_____ 1. Types of this nutrient are either saturated, unsaturated, or polyunsaturated.

_____ 2. Made up of building blocks called amino acids.

_____ 3. Needed to form muscles, bone, and blood.

_____ 4. Inadequate intake may result in ketosis, an acid condition in the blood.

_____ 5. Its main function is to supply energy for heat and the body's activities.

_____ 6. Sources are fruits, grains, vegetables, seeds and legumes.

_____ 7. Makes up the antibodies that help fight infection.

_____ 8. The recommended intake for adults is 30 percent of total calories.

_____ 9. It's the body's main source of energy.

_____ 10. Excellent sources are meat, eggs, fish, poultry, and milk.

_____ 11. A concentrated source of energy.

_____ 12. Contained in some of the hormones that regulate chemical reactions in the body.

_____ 13. Three types are sugars, starches, and cellulose.

_____ 14. The scientific name is lipids.

_____ 15. Makes up enzymes: substances that speed up or slow down chemical reactions in the body.

_____ 16. Essential to life and found in every cell in the body.

_____ 17. Starch, a polysaccharide, is the most complex form.

_____ 18. Provides more energy per gram than any other nutrient.

_____ 19. Needed for repairing body tissue.

_____ 20. Serves to protect vital organs, such as the kidneys, from injury and helps hold them in place.

## *Activity 14-5 • Sentence Completion*

**Directions**

**Complete the following items by placing the best response in the blanks provided. Refer to the word list below for possible answers. Some words will not be used at all.**

**Word List**

amino acids
body building
carbohydrates
cellulose
cholesterol
complete proteins
fats
fat-soluble vitamins
iodized salt
malnutrition
minerals
nutrients
trace minerals
water
water-soluble vitamins

1. Proteins, carbohydrates, fats, vitamins, minerals, and water are called ________________.
2. The primary purpose of protein is ________________.
3. Nutrients manufactured in plants containing large amounts of sugar and starch are classified as ________________.
4. Each protein is composed of smaller units called ________________.
5. Nutrients providing the most concentrated source of energy are ________________.
6. Vitamins A, D, E, and K are called ________________.
7. Nutrients from animal products, such as meat, poultry, cheese, milk, fish, and eggs, are referred to as ________________.
8. Minerals found in minute quantities in the body are referred to as ________________.
9. An effective way to provide iodine in the body and to prevent goiter is the use of ________________.
10. Roughage, which provides bulk in the diet, contains ________________.

# Activity 14-6 • Matching

## Directions

**Match the term in column B with the statement in column A.** Place the letter for each term in column B in the blank to the left of the matching numbered statements in column A. Some letters may be used more than once.

## Column A

_____ 1. Asorbic acid.

_____ 2. Prevents goiter; needed for proper functioning of thyroid gland.

_____ 3. Builds strong, straight bones; contributes to strong teeth and normal heartbeat.

_____ 4. Works with calcium to build healthy bones and teeth.

_____ 5. Builds red blood cells.

_____ 6. Thiamin, niacin, and riboflavin.

_____ 7. May be thrown out of balance by consuming too many soft drinks.

_____ 8. Helps the body form a "cement" called collagen.

_____ 9. Helps eyes adapt to darkness; promotes unblemished skin.

_____ 10. Contains sugar and starch, which are changed into a form usable as energy.

## Column B

A. Calcium
B. Carbohydrate
C. Iodine
D. Iron
E. Phosphorus
F. Vitamin A
G. Vitamin B complex
H. Vitamin C

## *Activity 14-7 • Illustration*

### Directions

**Complete** each of the following instructions using the *Food Guide Pyramid* illustration below.

### Instructions

(A) Divide the pyramid into the six food categories.

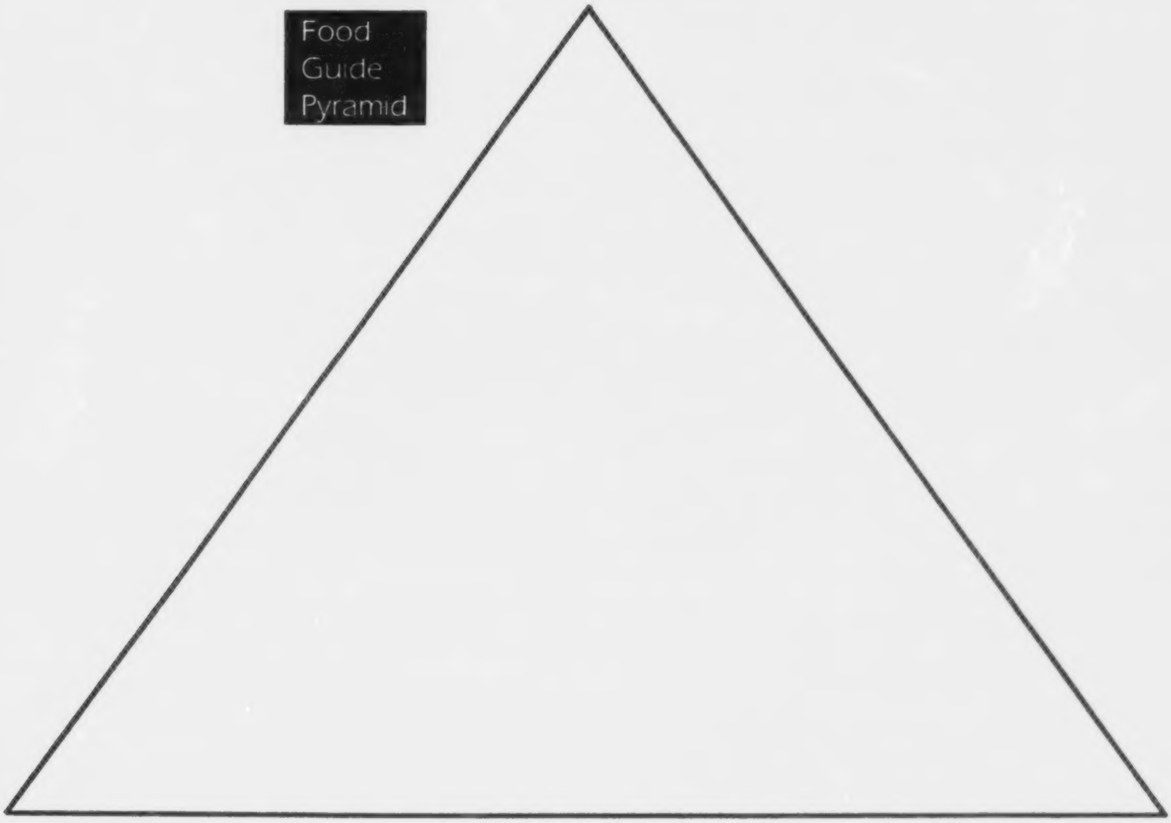
(B) Label each food category.

(C) Write the suggested serving sizes under each food category label.

(D) Place each of the foods listed in the food list into the appropriate food category.

### Food List

1. broccoli
2. cabbage
3. candy
4. chicken
5. cottage cheese
6. cranberries
7. donuts
8. flour
9. ham
10. jam
11. lentils
12. liver
13. noodles
14. orange juice
15. pickles
16. rice
17. rolled oats
18. salmon
19. soft drinks
20. yogurt



## Activity 14-8 • Short Answer

**Directions**

The foods contained in a taco are listed below. Categorize the specific foods into the *Food Guide Pyramid* food groups Then, list the main nutrients provided in each category from each of these foods.

| Food Item | Food Group | Nutrient(s) |
|---|---|---|
| 1. Ground Beef | | |
| 2. Tomatoes | | |
| 3. Cheese | | |
| 4. Lettuce | | |
| 5. Corn Tortilla | | |

Now, think of two other foods that contain several of the food categories all in one dish or entrée. Complete the following information using the dishes or entrées you chose.

Dish or Entrée: ______________________________

| Food Item | Food Group | Nutrient(s) |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

Dish or Entrée: ______________________________

| Food Item | Food Group | Nutrient(s) |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

## *Activity 14-9 • Case Studies*

### Case Study #

**Elsie is a 19-year** old college student. She is moderately active, riding her bike four miles to and from **the college at least** four times a week. To maintain her current weight, Elsie should eat the smaller servings recommended in the *Food Guide Pyramid.*

(A). Below, is a sample of Elsie's diet for one day. In the spaces provided, list each of the foods and then total the servings. NOTE: Check for recommended daily requirements of water.

**BREAKFAST:** Hot oatmeal with maple syrup, 1 slice whole wheat toast with butter, milk, glass of orange juice
**SNACK:** Soft drink
**LUNCH:** Sweet and sour chicken, fried rice, 2 vegetable egg rolls, hot tea with lemon
**SNACK:** Apple, soft drink
**DINNER:** Baked ham, rice pilaf, broccoli with Hollandaise sauce, sponge cake with vanilla ice cream
**SNACK:** Hot tea, 4 crackers with peanut butter

(A) Breads, cereals, rice, and pasta: ________________________________

(B) Vegetables: ________________________________

(C) Fruits: ________________________________

(D) Milk, yogurt, and cheese: ________________________________

(E) Meat, poultry, fish, dry beans, eggs, and nuts: ________________________________

(F) Fats, oils, and sweets: ________________________________

Total Servings: (A) ______ (B) ______ (C) ______ (D) ______ (E) ______ (F) ______

(B) Compare the total servings in Elsie's diet for each food group with the suggested servings. Answer the following questions based on your findings.

1. Which food categories have the recommended number of servings?
________________________________
2. Which food categories are lacking in the recommended number of servings?
________________________________
3. What foods might Elsie add to her diet to improve it?
________________________________
4. What foods might Elsie limit to improve her diet?
________________________________
5. How does Elsie do on limiting her intake of fats? Explain.
________________________________

## Case Study #2

Carlos is 35 and works as a computer systems analyst. In his spare time, he enjoys watching sports on TV. This is as much exercise as Carlos gets! He is about 25 pounds heavier than his ideal weight.

(A) Help Carlos find out where his eating habits might be adjusted to help him lose the extra pounds. In the spaces provided, list each of the foods and then total the servings. NOTE: Check for recommended daily requirements of water.

**BREAKFAST:** 3-egg omelet with Spanish sauce, hash browns, 2 slices rye toast with butter, coffee
**SNACK:** Candy bar
**LUNCH:** Meat loaf, mashed potatoes and brown gravy, 2 corn muffins with butter, coffee
**SNACK:** 6 chocolate cookies, milk
**DINNER:** Fried catfish, corn on the cob with butter, 6 hush puppies, cherry cobbler with ice cream, iced tea
**SNACK:** Buttered popcorn, soft drink

(A) Breads, cereals, rice, and pasta: ____________________

(B) Vegetables: ____________________

(C) Fruits: ____________________

(D) Milk, yogurt, and cheese: ____________________

(E) Meat, poultry, fish, dry beans, eggs, and nuts: ____________________

(F) Fats, oils, and sweets: ____________________

Total Servings: (A)________ (B)________ (C)________ (D)________ (E)________ (F)________

(B) Compare the total servings in Carlos' diet for each food group with the suggested servings. Answer the following questions based on your findngs.

1. Which food categories have the recommended number of servings?
____________________

2. Which food categories are lacking in the recommended number of servings?
____________________

3. What foods might Carlos add to improve his diet?
____________________

4. What foods might Carlos limit to improve his diet?
____________________

5. How does Carlos do on limiting his intake of fats? Explain.
____________________

# *Activity 14-10 • Short Answer and Case Studies*

**Directions**

(A) **For each factor** listed below, (1) describe how each can influence a person's eating habits, and (2) circle the factors that influence you the most.

Cultural background: ______________________________

______________________________

Personal preferences: ______________________________

______________________________

Season of the year: ______________________________

______________________________

Age: ______________________________

______________________________

Health: ______________________________

______________________________

(B) Read the following case study. Answer the questions using the spaces provided.

Shim, Herman, Mercedes, Tony, Alonzo, and Lorenda were eating together. Everyone, except Tony, was eating a candy bar, chips, and drinking a soft drink for lunch. Tony was eating a sliced beef sandwich, an apple, and drinking bottled water.

(1) What factors are influencing the eating habits of most of the group?

______________________________

(2) What factors do you think influence Tony's eating habits?

______________________________

(3) What would you be eating if you were with the group?

______________________________

(4) What factors influenced your response to #3?

______________________________

## Activity 14-11 • True/False

### Directions

**Read each** statement. If the statement is **True**, circle the **T** to the left of the statement. If the statement is **False**, circle the **F** to the left of the statement. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. The elementary age child needs more food than the younger child.

T F 2. A teenage boy needs more iron-rich foods than does a teenage girl.

T F 3. Compared with adolescents, adults have a higher need for protein and calcium.

T F 4. The average man or woman aged 55 - 75 needs 300 to 400 fewer calories per day than those needed during the 35 - 55 year period.

T F 5. The major nutritional problem of adults is weight control.

T F 6. Older people need larger amounts of the B-complex vitamins.

T F 7. Because of an increase in activity and a rise in basal metabolism, adolescents require less food than adults.

T F 8. Like teenage girls, a woman needs more calories than does a man.

T F 9. A person should maintain her/his weight at age 25 throughout adulthood.

T F 10. Many elderly people require special diets for various health conditions.

## *Activity 14-12 • Short Answer*

### Directions

**Using the space below**, plan a menu for one day. Create the menu around a heavy breakfast, a medium lunch and a light dinner. Ensure that the planned menu meets the suggested number of servings from the *Food Guide Pyramid*. Total the servings in each food group and write this information in the spaces provided at the bottom of the exercise. Be certain to include water as a beverage. You may add snacks at any point during the day.

### Breakfast

### Lunch

### Dinner

Total the number of servings in each food group here: ______

Grains: ______

Fruit: ______

Vegetables: ______

Milk, yogurt, and cheese: ______

Meat: ______

Fats, oils, and sweets: ______

# Chapter 15

## Meeting Special Needs

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 15:

2B Evaluate considerations and accommodations for employees and customers with special needs.
7G Use appropriate terminology related to the food production and service industry.
9A Utilize effective planning strategies for food production operations.
9G Apply nutrition principles in planning, preparation, and presentation for food production operations.
9H Describe food preparation strategies for meeting special dietary requirements.

## Introduction

Foodservice workers need an understanding of special diets. In commercial foodservice establishments, workers must answer questions from customers about preparation methods and about the ingredients used. They may be asked to suggest menu items that fit the customer's dietary needs. Occasionally, customers request that a dish be prepared especially to meet their dietary needs. Some restaurants and cafeterias offer low-calorie or other special items to meet customers needs. But, in general, commercial foodservice establishments make major diet and menu changes only in response to massive consumer demand. Salad bars, restricted salt usage in cooking, posted calorie information, and sometimes nutrition and exercise information are examples of changes that have occurred because of massive consumer demand.

## *Activity 15-1 • Short Answer*

### Directions

You are the director of Shady Pines, a long-term health care facility. Recent developments have resulted in an opening for a full-time dietary aide or foodservice employee. Since Shady Pines houses both sick and aging residents, you want to be certain that your new employee understands the special needs of this group. Listed below are areas of concern that you plan to address with each applicant. In the spaces provided after each item, write the best response that you would expect from the people you interview.

1. Explain the difference between a *patient* and a *resident.* ________________________________

2. Define *ambulatory.* ________________________________

3. Food means different things to different people. Name the two basic needs that food helps to meet for patients in a long-term care facility.
   (A) ____________________ (B) ____________________

4. Define *chronic illness.* ________________________________

5. Both patients and residents can experience changes in eating habits. Name three factors that might influence a person's response to food.
   (A) ____________________ (C) ____________________
   (B) ____________________

6. As a dietary aide or foodservice employee, you notice a resident or a patient exhibiting disinterest in food or a refusal to eat. Explain the action you are obligated to take. ________________________________
   Explain why this action is necessary. ________________________________

7. At Shady Pines, we encourage ambulatory residents to take their meals in the dining room. Provide four reasons as to why you think this is done.
   (A) ____________________ (C) ____________________
   (B) ____________________ (D) ____________________

8. Explain why selective menus are used for older and aging patients.
   ________________________________

9. Define *medical nutrition therapy.* Explain the importance of strictly following prescribed diets.
   ________________________________

10. Some residents and/or patients may require nourishments. Define the term *nourishments.*
    ________________________________
    Provide two examples of nourishments.
    (A) ____________________ (B) ____________________

# Activity 15-2 • Multiple Choice

**Directions**

Complete the sentences below by choosing the best response from the choices listed under each of the sentences. Write the letter of the response in the blank provided at the left of the sentence.

_____ 1. Mr. Brown is hospitalized for internal open lesions. The foods he is served should come from a _____ diet.
A. bland
B. liquid
C. soft

_____ 2. Mrs. Jennings is recommended for a nutritionally-adequate diet. Since she has no teeth, however, her doctor suggests a __________ diet.
A. bland
B. full-liquid
C. soft

_____ 3. Before Mr. Nickel can undergo surgery, his doctor has recommended his losing some of his extra weight that could cause complications in the operating room. As a result, Mr. Nickel is on a __________ diet.
A. bland
B. diabetic
C. full-liquid

_____ 4. Ms. Salvini uses an exchange list composed of six food groups in planning her meals. She uses it to help control her food intake due to a medical disorder. Ms. Salvini eats a _______ diet.
A. bland
B. diabetic
C. soft

_____ 5. Howard is recovering from surgery. Today his doctor had the IV feeding tube removed, but Howard is having difficulty swallowing. He will be put on a ________ diet.
A. clear-liquid
B. liquid
C. soft

_____ 6. Mr. Chin, who is a cardiovascular patient, follows a ________ diet.
A. bland
B. diabetic
C. soft

_____ 7. Shirley has been on a clear-liquid diet for two days. She needs a more nutritional diet, but is still unable to eat solid foods. Shirley should eat a __________ diet.
A. bland
B. full-liquid
C. soft

_____ 8. Following surgery, Mrs. Voltran's diet included soft eggs (not fried), toasted white bread, and cooked cereals. These foods are part of a _______ diet.
A. bland
B. diabetic
C. soft

_____ 9. Priscilla, who is 25 pounds overweight and pregnant, has been put on a special diet that specifies exact amounts of protein, fat, and carbohydrates. This is a type of _______ diet.
A. bland
B. therapeutic
C. soft

_____ 10. Mr. Munoz is suffering from some digestive problems so his doctor has suggested he omit foods with coarse fibers, fried foods, and caffeinated beverages. This diet is a type of _______ diet.
A. therapeutic
B. diabetic
C. soft

## *Activity 15-3 • Short Answer*

**Directions**

You are a dietary aide or foodservice employee in a hospital. For patients who are on therapeutic diets, you help them choose their food from the selective menu supplied by the hospital. Complete the box below by listing the foods approved for each patient's diet. Use the supplied hospital breakfast menu to complete this exercise.

### Hospital Breakfast Menu

This is the breakfast menu for tomorrow morning. Please circle your preferences. Choose one food from each group.

| Juices/Fruits | Entrées | Breads | Extra |
|---|---|---|---|
| Orange Juice<br>Apricot Nectar<br>Stewed Prunes<br>Apple Juice<br>Grape Juice<br>Sliced Peaches | Scrambled Eggs<br>Dry Cereal<br>Scrambled Egg Substitute<br>Soft-cooked Egg<br>Hard-cooked Egg<br>Oatmel | White Toast<br>Wheat Toast<br>Biscuit<br>Muffin | Coffee<br>Tea<br>Milk<br>Margarine<br>Jam or Jelly |

| Patient | Diet | Allowed Foods |
|---|---|---|
| Ms. McWilliams | Bland | |
| Mr. Gutierrez | Full-liquid | |
| Mr. Ellis | Soft | |
| Ms. Benson | Clear-liquid | |

C45

## Activity 15-4 • True/False

**Directions**

**Read the items listed below.** If the statement is **True**, circle the **T** to the left of the number. If the statement is **False**, circle the **F** to the left of the number. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. It is extremely important that prescribed diets be strictly followed.

T F 2. When ordering a therapeutic diet, each patient is considered individually.

T F 3. Patients eat better when foods are selected for them.

T F 4. The planning of therapeutic diets is one of the duties of a dietary aide.

T F 5. Explanation cards help patients to understand why a diet modification has been ordered.

T F 6. Doctors make the modifications to the patients' existing diets when they order therapeutic diets.

T F 7. A general diet includes recommended amounts of foods from the food groups in the Daily Food Guide.

T F 8. When planning diets, emphasis should be placed on allowed foods.

T F 9. Supplies for supplementary feedings are usually ordered for each hospital floor by a dietary aide.

T F 10. Special feedings that are part of the patient's diet therapy are called nourishments.

## Activity 15-5 • Sentence Completion

**Directions**

**Complete** the following sentences by entering the best term(s) in the blanks provided.

1. An example of a nourishment that is high in calories, protein, vitamins and minerals and that is given in addition to regular meals is ______________.
2. Special feedings that are part of the patient's diet therapy are called ___________________.
3. Patients who cannot be adequately nourished by oral intake use _______________.
4. Extra beverages and foods taken during the day, in addition to regular meals, are ______________.
5. Bland, diabetic, and liquid diets are examples of _________________ diets.

# Chapter 16

## Food Production Equipment

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 16:

7G Use appropriate terminology related to the food production and service industry.

9D Demonstrate appropriate use, care, and maintenance of tools, utensils, and equipment utilized in food production.

9J Perform appropriate tasks in food production according to industry standards.

9K Apply available technology in food production.

10D Select equipment and utensils appropriate for prescribed tasks.

### Introduction

A variety of equipment is used in food preparation. Equipment is needed for weighing ingredients, opening cans, cutting foods, mixing foods, making and dispensing beverages, and cooking food. The equipment used will depend on the type and volume of foodservice. For example, fast-food establishments may have specialized equipment designed for preparing and serving menu items quickly and efficiently.

## *Activity 16-1 • Matching*

### Directions

Match the scale to the appropriate function. Place the letter of the scale in the blank to the left of each function. Each letter may be used more than once.

### Functions

_______ 1. Used for weighing servings of food and rolls

_______ 2. Used for weighing dry ingredients such as beans, macaroni, rice, cheese, fruits, and vegetables

_______ 3. Used for weighing ingredients or scaling dough

_______ 4. Used for weighing batters and mixes

_______ 5. Used for weighing large amounts of food, this kitchen model is usually on wheels

### Scales

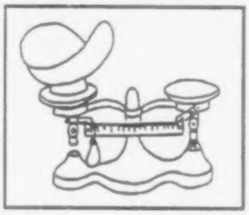
A. baker's
B. balance
C. portion
D. spring-type model

## *Activity 16-2 • Short Answer*

### Directions

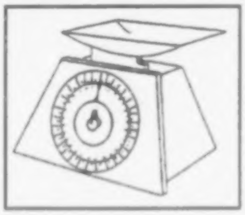
Look at each illustration below. In the blanks below each illustration (A) write the name of the scale being illustrated, and (B) briefly describe the procedure for operating the scale.

1.



(A) ____________________
(B) ____________________
____________________
____________________
____________________

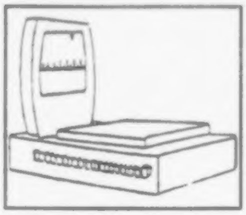
2.



(A) ____________________
(B) ____________________
____________________
____________________
____________________

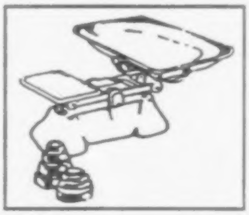
3.

(A) ____________________
(B) ____________________
____________________
____________________
____________________



4.

(A) ____________________
(B) ____________________
____________________
____________________
____________________



# Activity 16-3 • Short Answer

**Directions**

**Read the following items.** Write your best response in the blanks provided.

1. Explain why the top of a food can should be wiped with a damp cloth prior to opening.

2. Provide one reason why it is important to check the shank blade of a bench-type manual can opener for nicks and grooves.

3. Give four reasons why the blade of a can opener should be wiped with a damp cloth after each operation.

(A)

(B)

(C)

(D)

4. Explain why sanitizing solution is used for cleaning can opener blades.

5. Provide one reason why the lid from an opened food can should be removed before it falls into the opened can.

6. List the 2 steps in cleaning electric can openers.

(A)

(B)

# *Activity 16-4 • Case Study*

**Directions**

Read the case study. Respond to the following items by writing your responses in the blanks provided.

**Case Study**

Today is Dan's first day as kitchen helper at the Golden Carrot Restaurant. The manager has asked you to help Dan get familiar with the food slicer used in food preparation. Respond to the following items as you help Dan in his new position.

1. List three types of foods that can be used with the food slicer.
   (A) ____________________ (C) ____________________
   (B) ____________________

2. You need to use the food slicer to prepare a backup pan of sliced turkey breast. List the steps you will demonstrate to Dan for correct usage of this equipment.
   (A) ________________________________________
   (B) ________________________________________
   (C) ________________________________________
   (D) ________________________________________
   (E) ________________________________________

3. Safety precautions should always be followed when using food preparation equipment. List five precautions that you think Dan should know prior to using the food slicer.
   (A) ________________________________________
   (B) ________________________________________
   (C) ________________________________________
   (D) ________________________________________
   (E) ________________________________________

4. Instruct Dan in daily cleaning of the food slicer.
   (A) List the three steps for preparing the equipment for cleaning:
      1. ________________________________________
      2. ________________________________________
      3. ________________________________________
   (B) Describe the steps for cleaning the following equipment parts:
      1. gauge plate: ______________________________
      2. slicer blade: ______________________________
      3. blade guard: ______________________________

5. Instruct Dan where to leave the blade guard after cleaning.
   ________________________________________

## Activity 16-5 • Short Answer

**Directions**

Complete the following items by writing your responses in the blanks provided.

(A) Describe the food preparation uses for the following:

1. Fod cutter or chopper: ______________________

2. Food processor: ______________________

(B) List the eight steps to be followed when operating a food cutter/chopper.

1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________
8. ______________________

(C) Complete the box by providing five safety precautions to follow when using a food cutter/chopper or food processor.

| Food Cutter or Chopper | Food Processor |
|---|---|
| 1. ______ | 1. ______ |
| 2. ______ | 2. ______ |
| 3. ______ | 3. ______ |
| 4. ______ | 4. ______ |
| 5. ______ | 5. ______ |

## Activity 16-6 • Matching

**Directions**

Match the mixing equipment to the appropriate descriptions by placing the letter of the mixing equipment in the blank to the left of the description. Each letter may be used only once.

**Descriptions**

_____ 1. Used to feed food through a chopper.

_____ 2. Used for grinding dry bread crumbs, grating hard cheese, and chopping hard-cooked eggs.

_____ 3. Used for slicing, grating or shredding foods.

_____ 4. 5-quart mixer used for creaming, mixing, or beating ingredients.

_____ 5. Used for mixing heavy dough requiring a folding and stretching action.

_____ 6. Used for incorporating air into light mixtures.

_____ 7. Used for general mixing but never used for heavy doughs.

_____ 8. Used for combining shortening and flour by a cutting action.

_____ 9. Used for mixing and blending ingredients or for incorporating air into the product.

_____ 10. 12 - 20 quart mixer used for creaming, mixing, or beating ingredients.

**Mixing Equipments**

A. bench model mixer
B. dough hook
C. flat beater
D. floor model mixer
E. meat and food chopper
F. pastry blade
G. pusher
H. table model mixer
I. vegetable chopper
J. wire whip

## Activity 16-7 • Short Answer

**Directions**

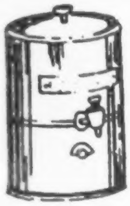
List five safety precautions that should be observed when using a mixer.

1. ____________________________________________
2. ____________________________________________
3. ____________________________________________
4. ____________________________________________
5. ____________________________________________

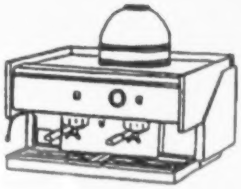
## Activity 16-8 • Short Answer

**Directions**

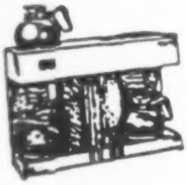
**Identify each** type of beverage equipment below by writing the name of the equipment in the blank provided beneath each illustration.



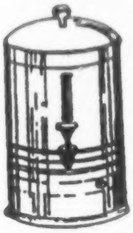
1. ______________________



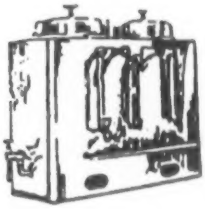
2. ______________________



3. ______________________



4. ______________________



5. ______________________

## *Activity 16-9 • Short Answer*

**Directions**

**The following terms refer to cooking equipment. According to the instructions, fill in the blanks in the spaces provided.**

1. Give examples of two foods which might be cooked using each of the follwoing cooking equipment.

(A) Grill: 1. ______________________
2. ______________________

(B) Deep Fat Fryer: 1. ______________________
2. ______________________

(C) Compartment Steamer: 1. ______________________
2. ______________________

(D) Steam-Jacketed Kettle: 1. ______________________
2. ______________________

(E) Broiler: 1. ______________________
2. ______________________

2. Briefly describe the cleaning procedure necessary for the following cooking equipment.

(A) Range top: ______________________________________________

(B) Exhaust hood: ______________________________________________

(C) Grill: ______________________________________________

(D) Broiler: ______________________________________________

(E) Toaster: ______________________________________________

3. Briefly describe one advantage of each of the following types of ovens:

(A) Microwave: ______________________________________________

(B) Stack: ______________________________________________

(C) Revolving: ______________________________________________

(D) Convection: ______________________________________________

(E) Reconstitution: ______________________________________________

# Chapter 17

## Cold Storage, Serving, and Cleaning Equipment

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 17.

7G Use appropriate terminology related to the food production and service industry.

9D Demonstrate appropriate use, care, and maintenance of tools, utensils, and equipment utilized in food production.

9J Perform appropriate tasks in food production according to industry standards.

9K Apply available technology in food production.

10D Select equipment and utensils appropriate for prescribed tasks.

### Introduction

Cold storage equipment, hot and cold serving equipment, and dishwashing equipment are essential for foodservice sanitation. Cold storage equipment keeps perishable food out of the danger zone until it is ready for preparation or service. Hot and cold serving equipment keeps prepared foods out of the danger zone until they are served. Cleaning equipment cleans and sanitizes dishes, glassware, flatware, and equipment. Sanitizing may be done by heat, which can also be referred to as thermal, or with a sanitizing solution. Safety and energy conservation factor as well as the type of equipment and utensils being sanitized may influence the choice of which method to use.

## Activity 17-1 • True/False

**Directions**

**Read the statements below. Circle the T to the left of the item if the statement is True, and circle the F if the statement is False.** If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Dairy products should be kept at 38° - 40°F.

T F 2. Freezers should be defrosted when frost is 1-inch thick on sides or coils.

T F 3. Meat, poultry, and fish should be kept at 38° - 40°F.

T F 4. Pass-through refrigerators are small rooms lined with shelves located at work stations.

T F 5. Reach-in refrigerators and freezers are placed between the kitchen and the serving area.

T F 6. Refrigerators should be defrosted when frost is 1/8-inch thick on coils or other parts of the interior.

T F 7. Roll-in refrigerators and freezers are small refrigerated rooms where prepared food can be kept until serving time.

T F 8. Raw fruits, vegetables, and eggs should be kept at 32° - 36°F.

T F 9. To maximize storage, refrigerated foods should be crowded together.

T F 10. Walk-in refrigerators have doors in the front and the back.

## Activity 17-2 • Short Answer

**Directions**

Read the following items. Place your response in the space provided.

1. To ensure proper air circulation and minimize refrigerator temperature variations, several rules should be observed. List three.
   (A) ______
   (B) ______
   (C) ______

2. Identify how often each of the following types of cold storage units should be cleaned.
   (A) Reach-in and pass-through: ______
   (B) Walk-in and roll-in: ______

3. List two products used to prevent odors in refrigerators.
   (A) ______
   (B) ______

4. Identify how often temperature readings should be taken from refrigerators and freezers.
   ______

5. Identify the correct temperatures for each of the food products listed below:
   (A) Meat, poultry, and fish ______ °F.
   (B) Raw fruits, vegetables, and eggs ______ °F.
   (C) Dairy products ______ °F.
   (D) Frozen foods ______ °F.

6. Define *freezer burn*. ______

7. Explain why frozen foods should not be held at temperatures above 0°F.
   ______

8. Explain why foods should not be refrozen.
   ______

9. How soon should foods be used after thawing? ______

10. When defrosting the freezer, explain what steps should be taken to properly store the frozen foods.
    ______

11. (A) Identify the *method* used for frozen food storage.
    ______
    (B) Explain how this method ensures food quality.
    ______

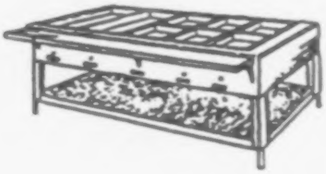
12. Name one sign that a refrigerator or freezer is malfunctioning.
    ______

# Activity 17-3 • Pictograms

**Directions**

**In the spaces provided,** (A) identify each type of specialized food warming equipment illustrated below, and (B) provide a brief description of how the equipment operates.

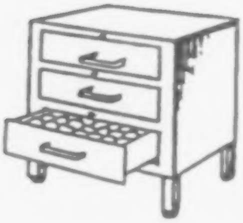
1.



(A)

(B)

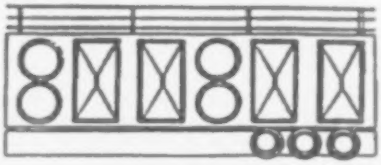
2.



(A)

(B)

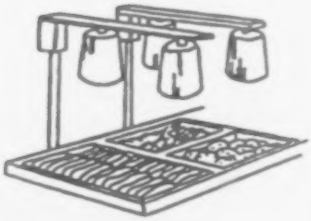
3.



(A)

(B)

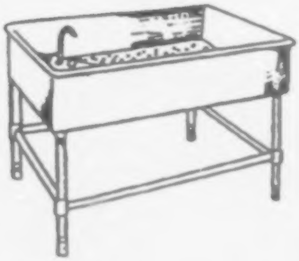
4.



(A)

(B)

5.



(A)

(B)

## Activity 17-4 • Short Answer

**Directions**

Read each item listed below. Write your response in the space provided.

1. List three items that could damage the garbage disposer knife blades.
   (A) ______________________________
   (B) ______________________________
   (C) ______________________________

2. Explain how a garbage disposer operates (what happens when the "on" switch is pressed).
   ______________________________
   ______________________________

3. Identify the first step when cleaning the garbage disposer.
   ______________________________
   ______________________________

## Activity 17-5 • Numbering

**Directions**

Read the list of basic steps for effective dishwashing. Arrange the steps in the order of performance. Place a number "1" in the blank to the left of the step you would perform first; a number "2" to the left of the second step; and so on up to number 8- the eighth step.

**Effective Dishwashing**

___ Prewash

___ Rinse

___ Sanitize

___ Store

___ Scrape

___ Rack

___ Wash (in machines)

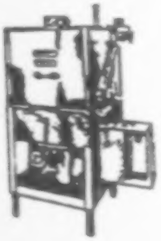
___ Air dry

# Activity 17-6 • Pictograms

**Directions**

For (A), identify each type of cleaning equipment illustrated below, and for (B), provide a brief description of how the equipment operates. Use the spaces provided to record your responses.

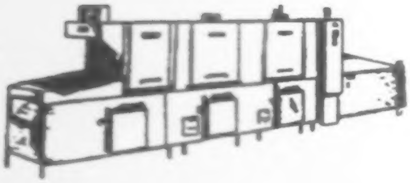
1.



(A) ______________________________

(B) ______________________________

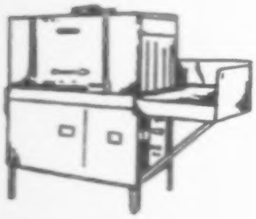
2.



(A) ______________________________

(B) ______________________________

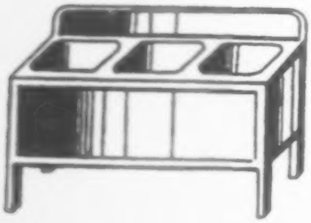
3.



(A) ______________________________

(B) ______________________________

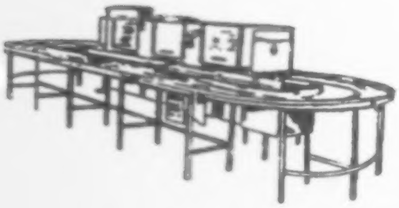
4.



(A) ______________________________

(B) ______________________________

5.



(A) ______________________________

(B) ______________________________

## Activity 17-7 • Multiple Choice

**Directions**

**Complete** the sentences below by choosing the best response from the choices listed under each of the sentences. Write the letter of the response in the blank provided at the left of the sentence.

_____ 1. Each of the following is a type of work center or station except the ________ station.

A. beverage
B. cold
C. dishwashing
D. equipment

_____ 2. The number and types of work stations depends on each of the following except ____________

A. the menu.
B. the number of employees.
C. the size of the kitchen.
D. the type of service.

_____ 3. The placement of the work stations is determined by ____________

A. the flow of the food.
B. the flow of the service.
C. the flow of both the food and service.
D. the restaurant designer.

_____ 4. Receiving and storage stations are usually placed ____________

A. at the beginning of the line.
B. at the end of the line.
C. in the middle of the line.
D. next to the dishwashing station.

_____ 5. The work flow in a station is usually directed in a ____________

A. clockwise direction
B. front to back direction.
C. left to right direction.
D. right to left direction.

# Chapter 18

## Tools and Utensils

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 18:

7G Use appropriate terminology related to the food production and service industry.

9D Demonstrate appropriate use, care, and maintenance of tools, utensils, and equipment utilized in food production.

10D Select equipment and utensils appropriate for prescribed tasks.

### Introduction

A variety of small equipment is used in preparing and serving food. Most small equipment used in foodservice establishments can be classified as either tools or utensils. Tools are hand-held equipment such as knives, spatulas, spoons, and turners. Utensils are containers for holding food. Foodservice employees should report tools and utensils needing repairs to the supervisor.

Many of the tools and utensils used in the foodservice establishment are similar to those used in the home. Those used in commercial foodservice may be larger and more durable, but their uses are the same.

# Activity 18-1 • Short Answer

**Directions**

**Respond to the following items in the spaces provided.**

1 (A) Explain the difference between tools and utensils.

(B) Provide three examples of each of the following:

| Tools: | Utensils: |
|---|---|
| 1. | 1. |
| 2. | 2. |
| 3. | 3. |

2. Give an example of how using standard measures in food production helps to control food costs.

3. Explain why foodservice establishments should *not* use glass measuring cups.

4. List three practices that foodservice workers should observe when caring for measuring equipment.

1.
2.
3.

5. Describe the measuring procedure that should be used for each of the following:

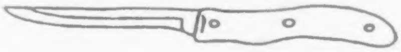
(A) Brown sugar:
(B) Solid shortening:
(C) Pinch of salt:
(D) Water:
(E) 1/8 tsp. cinnamon:
(F) White flour:
(G) Confectioner's sugar:

6. Distinguish between a *thermometer* and a *thermostat.*

# *Activity 18-2 • Identifying*

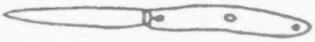
**Directions**

**(A) Identify** the cutting tools in the illustrations on the left. Write the name of the cutting tool in the blank to the right of each number.

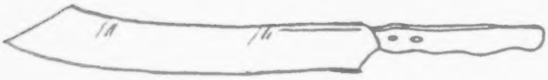


1. ______________________

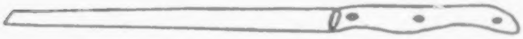
2. ______________________



3. ______________________



4. ______________________



5. ______________________

(B) Identify the cutting tool that you would use for each of the tasks listed below. Choose from the tools illustrated in (A), above. Write the number of the cutting tool (1 to 5) in the blank to the left of each task. Numbers may be used more than once.

______ (A) Slicing raw fruits

______ (B) Coring lettuce

______ (C) Slicing tomatoes

______ (D) Dicing and mincing recipe ingredients

______ (E) Scaling fish

______ (F) Dicing raw meats

______ (G) Paring fruits and vegetables

______ (H) Cutting sweet potatoes

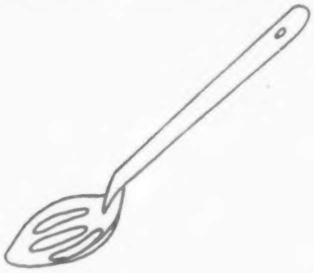
______ (I) Cutting cakes

______ (J) Removing eyes from potatoes

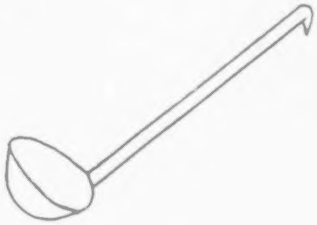
## Activity 18-3 • Pictograms

**Directions**

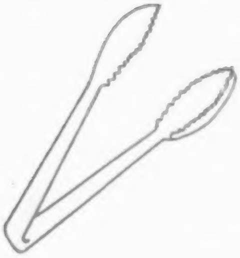
**For (A), identify** the hand tools illustrated below. For (B), give the main use for each tool.



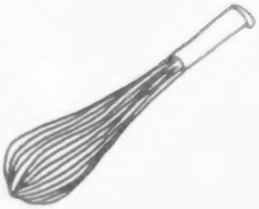
1. (A)
   (B)



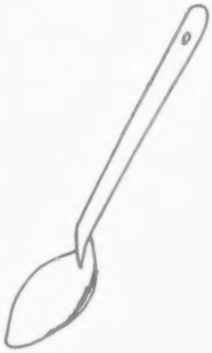
2. (A)
   (B)



3. (A)
   (B)



4. (A)
   (B)



5. (A)
   (B)

# Activity 18-4 • Matching

## Directions

Match the hand tool with the task. Place the letter of the hand tool in the blank to the left of each task. The letters may be used only once. Some letters will not be used.

## Tasks

____ 1. Removing food from flat pans

____ 2. Turning hamburgers

____ 3. Holding meat while slicing

____ 4. Cutting shortening into flour

____ 5. Removing grease from the top of stocks

____ 6. Stirring food in deep pots

____ 7. Stirring, tossing, and folding ingredients

____ 8. Shredding, slicing, and serrating foods

____ 9. Scraping bowls

____ 10. Filling muffin cups or dropping cookie dough on baking sheets

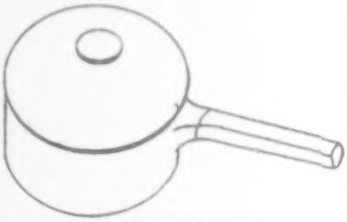
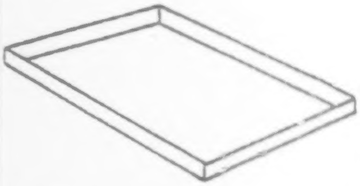
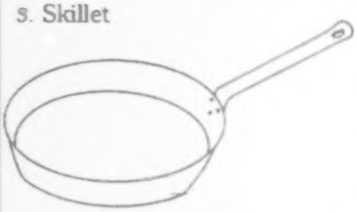
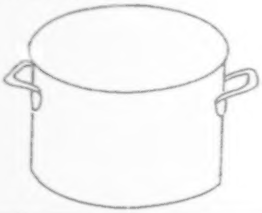
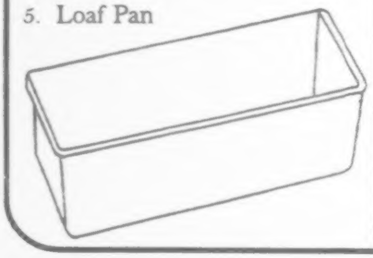
## Hand Tools

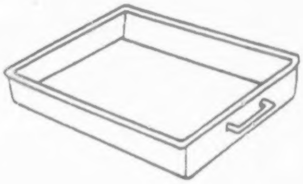
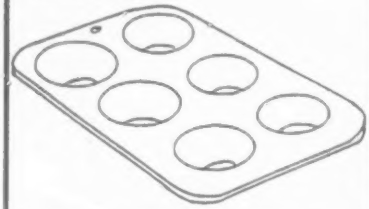
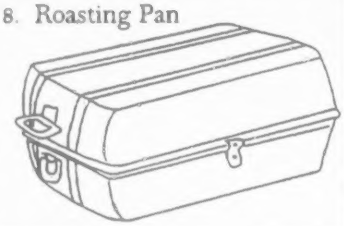
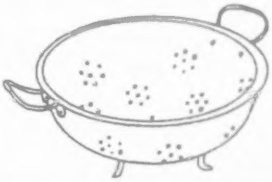
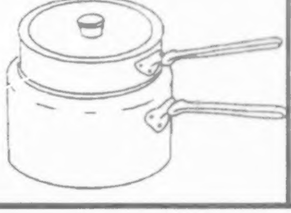
A. grater
B. offset spatula
C. paddle
D. pastry blender
E. rotary beater
F. rubber spatula
G. scoop
H. skimmer
I. spatula
J. two-tine or cook's fork
K. utility shears
L. wooden spoon

## *Activity 18-5 • Identifying*

**Directions**

In the space provided, write a brief description for the use of each piece of equipment illustrated.

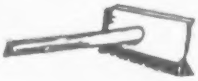
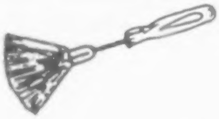
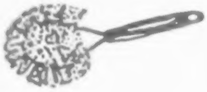
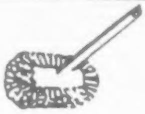
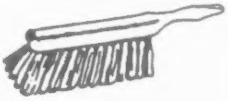
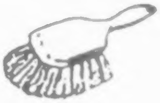
| Utensils | Uses |
|---|---|
| 1. Saucepan<br> | |
| 2. Baking Sheet<br> | |
| 3. Skillet<br> | |
| 4. Stock pot<br> | |
| 5. Loaf Pan<br> | |

| Utensils | Uses |
|---|---|
| 6. Bake Pan<br> | |
| 8. Muffin Pan<br> | |
| 8. Roasting Pan<br> | |
| 9. Colander<br> | |
| 10. Double Boiler<br> | |

## Activity 18-6 • *Identifying*

**Directions**

Complete the box below. First, (A) identify the type of brush illustrated and then, (B) give its function or use.

| Brushes | Types | Functions/Uses |
|---|---|---|
| 1.  | | |
| 2.  | | |
| 3.  | | |
| 4.  | | |
| 5.  | | |
| 6.  | | |
| 7. | | |

## Activity 18-7 • Matching

**Directions**

**Match the transporting equipment to the definition that best describes it. Place the letter of the transporting equipment in the space provided to the left of the definition. Each term may be used once, more than once, or not at all.**

**Definitions**

____ 1. Used for moving items to and from the dining area in a restaurant or cafeteria.

____ 2. Used for cooking near the table in the dining area.

____ 3. Used for transporting foods within a large establishment like a hotel or to another site.

____ 4. Used for preparing or keeping foods hot at the table.

____ 5. Used to serve casseroles or egg dishes.

____ 6. Equipped with temperature control devices, these are used in hospitals and long-term care facilities.

____ 7. Used by caterers to transport served plates.

____ 8. Used for storing items in the dining area.

____ 9. Used to dispense hot liquids such as coffee or tea.

____ 10. Usually used with a rechaud lamp.

**Transporting Equipment**

A. au gratin dish
B. banquet carts
C. bulk food carts
D. bussing carts
E. chafing dishes
F. combination hot and cold carts
G. food carriers
H. food warmers
I. samovar
J. service wagons

# Chapter 19

# The Foodservice Pantry: Food and Supplies

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 19:

7G Use appropriate terminology related to the food production and service industry.

8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.

9J Perform appropriate tasks in the food production according to industry standards.

## Introduction

Food and supplies are essential to any foodservice operation. Both the foods used in preparing menu items and supplies used in food preparation and service, such as dishes, paper towels, and cloth napkins, must be replenished as they are used up. It is the purchaser's job to place orders, called purchase orders, to obtain needed food and supplies. These orders are based on the needs of the establishment.

When the orders are delivered, they are carefully checked. The items are then stored properly to maintain their quality. As the items are needed, they are obtained from the storeroom either by a foodservice employee or by requesting the items from a storeroom worker.

The storeroom worker fills the request and removes the items from the list of food and supplies on hand. As supplies become low, this information is provided to the purchaser so that new orders may be placed.

## *Activity 19-1 • Matching*

### Directions

**Match the term to its appropriate definition. Place the letter of the term in the blank to the left of each definition. Each letter may be used once or not at all.**

### Definitions

____ 1. Used to obtain needed food and supplies.

____ 2. Detailed descriptions or instructions used in ordering food.

____ 3. Seller of a product.

____ 4. A slip listing all ordered foods and supplies.

____ 5. Used to identify the quality required in a specific product.

____ 6. Method that forces receiving clerks to count or weigh each item delivered.

____ 7. Daily written account of food and supplies received by the foodservice establishment.

____ 8. Supplying each department with the items they request.

____ 9. Issues food and supplies requisitioned by departments in the foodservice operation.

____ 10. An itemized list of food and supplies on hand.

### Terms

A. blind receiving
B. invoice
C. issuing
D. purchase orders
E. receiving clerk
F. receiving records
G. receiving sheets
H. inventory
I. standard
J. vendor
K. written specifications

# Activity 19-2 • Sentence Completion

**Directions**

Review the forms and qualities of food available and the purposes and uses of food specifications by completing the following activity. Read the statements and fill in the blanks with the word that best completes each sentence.

1. Foods that are packaged as mixes, partially processed, or ready-to-serve are known as ____________________ foods.

2. Rigid standards used to ensure that food is fit for human consumption are standards of __________________________

3. Foods that have undergone treatment to keep them from spoiling are called ____________________ foods.

4. The federal agency that sets standards of quality for many foods is the __________________________.

5. Classifying foods according to standards of quality is known as ____________________.

6. Salting, pickling, and sweetening are methods of __________________________.

7. Forms of food that help to reduce labor costs and ensure consistent quality in the foods served are ____________________ foods.

8. Mayonnaise, ketchup, peanut butter, and ice cream are all examples of ____________________ foods.

9. A product that is not as nutritious as the one it resembles or for which it is a substitute is labeled __________________________.

10. Food information such as serving size, calories per serving, total fat, and percent daily value are all components of a ____________________ label.

## Activity 19-3 • Case Studies

**Directions**

**Read each** of the case studies below. Answer the questions in the space provided.

1. Charlie's Rotisserie Chicken is part of a fast food chain. Every day, a truck from the company warehouse delivers frozen fried chicken, boxed instant potatoes, biscuit mix, and coleslaw ingredients. Geraldo, a kitchen helper, is on hand when the order arrives. What criteria should Geraldo check before signing the invoice?

2. A large order is delivered to the Coffee Cup Restaurant. Marie, the receiving clerk, notices that the delivery includes 100 lbs. of butter instead of the 100 lbs. of margarine ordered. What is the best action for Marie to take?

3. Shim is the receiving clerk at the Cattle Rustler Steakhouse. What are the guidelines for inspecting meats that Shim should follow?

4. The food director at the Happy Trails Hotel suspects that delivered food and supplies are not being received according to hotel guidelines, as she has noticed a drop both in food quality and hotel profit. In order to get food cost under control, she has issued a memo stating that all deliveries will now be using the *blind receiving* method. What implications does this have for the receiving clerk? How will the receiving clerk now go about checking deliveries?

5. Bay City Wholesalers has delivered a large order of cabbage, tomatoes, fresh corn-on-the-cob, and red-leaf lettuce to the SF Bay Restaurant. Claris, the new receiving clerk, suspects that the vegetables are not fresh. What do you suggest that Claris do?

## Activity 19-4 • Short Answer

**Directions**

Ronnie Baker is the food buyer for a large hotel. Read each item listed below and decide whether or not Ronnie should purchase the product for the hotel. Place a "√" in the appropriate column. Give an explanation for all "No" answers using the lines provided below the product.

| Product and Description | Yes | No |
|---|---|---|
| 1. The cases of eggs have stamped dates that are 32 days old.<br>____________________ | | |
| 2. The frozen hamburger patties are partially thawed.<br>____________________ | | |
| 3. The block of cheddar cheese appears dry and the edges crumble easily.<br>____________________ | | |
| 4. The purveyor has dented cans of foods at special discount prices.<br>____________________ | | |
| 5. The baking chickens have stickiness under the wings.<br>____________________ | | |
| 6. The red-leaf lettuce appears wilted and has dark places on the outer leaves.<br>____________________ | | |
| 7. A package of frozen strawberries is rock hard.<br>____________________ | | |
| 8. The 5-gallon container of ice cream has ice crystals formed around the edge of the lid.<br>____________________ | | |
| 9. The flour appears to contain tiny insects.<br>____________________ | | |
| 10. The lobsters are still alive.<br>____________________ | | |

# Activity 19-5 • Short Answer

**Directions**

**Imagine** that you are a food buyer for a popular restaurant. Complete the box below by explaining how you would judge the quality of each of the foods listed. Write your answers in the space provided.

| Foods | Standards for Judging |
|---|---|
| 1. Eggs | |
| 2. Dairy Products | |
| 3. Frozen Foods | |
| 4. Fresh Fruits and Vegetables | |
| 5. Flour, Pasta, and Rice | |

# Chapter 20

## Food Preparation Techniques

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 20:

7G Use appropriate terminology related to the food production and service industry.

7H Implement appropriate work-simplification procedures when performing assigned tasks.

9A Utilize effective planning strategies for food production.

9J Perform appropriate tasks in food production according to industry standards.

9K Apply available technology in food production.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9F Follow standardized recipes utilized in food production.

### Introduction

Consistency in the appearance and taste of food is a goal toward which every foodservice establishment should strive. To reach this goal, the food buyer carefully orders according to purchasing standards, and food preparation personnel help by carefully following standardized recipes. This means using standard weights and measures; appropriate equipment, tools, and utensils; and correct methods of preparation. Foodservice personnel contribute to the goal of consistency by accurately portioning and attractively garnishing foods.

## Activity 20-1 • Fill-in-the-Blank

**Directions**

**Review** the components of a standard recipe by studying the following recipe. Select a heading from **the list below** and the write the heading in the appropriate blank on the recipe.

**Headings**

- Amount
- Cooking Method
- Ingredients
- Notes
- Portion
- Procedure
- Serving Information
- Tools and Utensils
- Variation
- Yield

### Apple Dumplings

1. ______________ :
Bake: 40-45 min.
Oven: 400°F (205°C)

2. ______________ :
50 portions

3. ______________ :
1 dumpling

4. ______________ :
Rolling pin, pastry wheel, No. 16 dipper, baking pan, sauce pan

| 5. __________ | 6. ______________ | 7. ______________ |
|---|---|---|
| 5 lb. | Pastry | • Roll to 1/8-inch thickness and cut into 5-inch squares. |
| 12 lb | Sliced apples, *frozen* | • Place No. 16 dipper of apples in center of each pastry square.<br>• Fold corners to center on top of fruit and seal edges together.<br>• Place in lightly greased baking pans. Prick top of dumplings. |
| 4 lb.<br>2 qt.<br>1 lb.<br>2 t.<br>2 t. | Sugar<br>Water, *hot*<br>Butter or margarine<br>Cinnamon<br>Nutmeg | • Make syrup of sugar, hot water, butter, and spices.<br>• Pour syrup around dumplings.<br>• Bake. |

8. ______________ :
Fresh or canned fruit may be used. The amount of sugar will vary with the type of fruit.

9. ______________ :
Peach Dumplings: Substitute peaches for apples.

10. ______________ :
Serve warm.

# Activity 20-2 • Abbreviations

**Directions**

Write the word for each of the following underlined abbreviations used in standard recipes.

1. 10 Cal. per slice 1. ______________________
2. 1 lb. sugar 2. ______________________
3. Cook at 350°F 3. ______________________
4. 2 c. water 4. ______________________
5. 8 pound pkg. 5. ______________________
6. f.g. pepper 6. ______________________
7. Let stand 20 sec. 7. ______________________
8. 1 t. salt 8. ______________________
9. Approx. 300 cookies 9. ______________________
10. 2 tbsp. chopped onion 10. ______________________
11. 3 T. cornstarch 11. ______________________
12. Bake for 1 hr. 12. ______________________
13. 1 tsp. cinnamon 13. ______________________
14. 4 tablespoons M.S.G. 14. ______________________
15. 1 lg. apple 15. ______________________
16. 5 oz. coconut 16. ______________________
17. Cool at room temp. 17. ______________________
18. 1 sml. banana 18. ______________________
19. Wt. of baked cake 19. ______________________
20. 3 sq. unsweetened chocolate 20. ______________________
21. 1 qt. Half and Half 21. ______________________
22. Beat for 10 min. 22. ______________________
23. spk. of Tabasco sauce 23. ______________________
24. 5 # package 24. ______________________
25. 2 l. of cold water 25. ______________________

# Activity 20-3 • Abbreviations

**Directions**

Write the abbreviations for each underlined word in the following recipes.

## Chili Con Carne (for 50 people)

| | | Amount | Ingredient |
|---|---|---|---|
| ________ | 1. | 3 pounds | Beans, kidney |
| ________ | 2. | 1 gallon | Water, boiling |
| | | | ADD |
| ________ | 3. | 9 pounds | Beef, *ground* |
| ________ | 4. | 8 ounces | Onion, *chopped* |
| | | | ADD |
| ________ | 5. | 1 1/2 quarts | Tomato puree |
| ________ | 6. | 2 ounces | Chili powder |
| ________ | 7. | 3-4 ounces | Cumin seed, *ground* |
| ________ | 8. | 3 Tablespoons | Salt |
| ________ | 9. | speck | Ground black pepper |
| ________ | 10. | 3 gallons | Water to make a total volume of 3 gallons |
| ________ | 11. | 3 hours | Let simmer about 3 hours. |
| | | | ADD, *while stirring* |
| ________ | 12. | 5 ounces | Flour |
| ________ | 13. | 2 cups | Water, *cold* |

## Fudge

| | | Amount | Ingredient |
|---|---|---|---|
| ________ | 14. | 2 cups | Sugar |
| ________ | 15. | 2/3 cup | Milk |
| ________ | 16. | 1 1/2 tablespoons | Light corn syrup |
| ________ | 17. | 2 squares | Chocolate |
| ________ | 18. | few grains | Salt |
| ________ | 19. | 3 tablespoons | Butter |
| ________ | 20. | 1 teaspoon | Vanilla extract |

## Activity 20-4 • Matching

### Directions

Match the standard substitutions to the ingredients being substituted. Place the letter of the substitution in the blank to the left of each ingredient. Each letter may be used only once.

### Ingredients

_____ 1. 1 T. cornstarch

_____ 2. 1 sq. chocolate

_____ 3. 1 c. sour milk

_____ 4. 1 c. butter

_____ 5. 1 c. honey

_____ 6. 1 c. milk

_____ 7. 1 t. baking powder

_____ 8. 1 whole egg

_____ 9. 1 c. cake flour

_____ 10. 1 c. sour milk and 1 t. soda in flour mixture

### Substitutions

A. 1/2 c. evaporated milk and 1/2 c. water
B. 1 1/4 c. sugar plus 1/4 c. liquid
C. 2 T. flour
D. 1/4 tsp. soda plus 1/2 t. cream of tartar
E. 1 c. fresh milk plus 3 t. baking powder
F. 7/8 c. all-purpose flour
G. 3 T. cocoa plus 1 T. fat
H. 2 egg yolks
I. 1 c. margarine
J. 1 c. fresh milk plus 1 T. vinegar or lemon juice

## *Activity 20-5 • Short Answer*

**Directions**

**Read the following case studies and determine the amount of the substitutions for the ingredients listed in the recipes. Write your answers in the spaces provided.**

1. Marsha's employer asked her to make a chocolate cake. The recipe calls for 2 c. cake flour, 1 2/3 c. sugar, 1/2 c. shortening, 1 t. salt, 3 sq. melted chocolate, 1 c. sour milk, 1 t. soda, 3 eggs, and 1 t. vanilla. On checking her supplies, Marsha found all the needed ingredients except:

| | |
|---|---|
| 3 sqs. chocolate | 2 c. cake flour |
| 1 c. sour milk | 1 t. soda |

If Marsha uses (A) cocoa for chocolate, (B) sweet milk for sour milk, (C) all-purpose flour for cake flour, and (D) baking powder for soda, what amount of each of these substitutions will she use?

(A) ____________________ (C) ____________________

(B) ____________________ (D) ____________________

2. Marsha want to make fudge icing for the cake.

| The recipe called for: | Marsha found: |
|---|---|
| 2 c. sugar | sugar |
| 1 c. milk | (A) * non-fat dry milk |
| 1/4 t. salt | salt |
| 2 sq. chocolate | (B) * cocoa |
| 2 T. light corn syrup | cream of tarter |
| 2 T. butter | (C) * regular margarine |
| 1 t. vanilla | vanilla |

How can Marsha use the starred (*) ingredients as substitutes for the ingredients listed in the recipe? Give the amounts needed in each case and any additional ingredients she will need.

(A) non-fat dry milk: ____________________

(B) cocoa: ____________________

(C) regular margarine: ____________________

## *Activity 20-6 • Short Answer*

**Directions**

**Write the metric system equivalent for the following measurements in the blanks provided.**

3 t. 1. ____________________
16T. 2. ____________________
8 fl. oz. 3. ____________________
pinch 4. ____________________
2 pt. 5. ____________________
1 lb. 6. ____________________
f.g. 7. ____________________
spk. 8. ____________________
1/4 c. 9. ____________________
2 gal. 10. ____________________

# Activity 20-7 • Case Studies

**Directions**

Read the following case studies and convert the ingredients to the needed equivalents. Place your answers in the blanks provided.

1. Josie will help in the baking area this week. She has been asked to double the amount of ingredients in a cookie recipe for the baker. Show what amounts are needed of each ingredient after doubling the recipe.
   (A) 1 c. sugar ______
   (B) 1 c. margarine ______
   (C) 2 t. vanilla ______
   (D) 24 oz. flour ______
   (E) 2 T. cocoa ______

2. Elizabeth's work station for this week is in the supervising area. One of her tasks on the work sheet is to prepare 1 1/4 gal. fruit punch. The recipe she is using makes 2 1/2 gal. punch. Show how she will adjust the measurements to fit her task (use the largest measures).
   (A) 4 1/2 c. sugar ______
   (B) 3 c. water ______
   (C) 2- 6 oz. cans orange juice, frozen ______
   (D) 2- 6 oz. cans lemon juice, frozen ______
   (E) 1 gal. water makes 2 1/2 gal. punch ______

3. One of the tasks on Mark's work sheet today is to measure the ingredients for apple crisp. A red-penciled note attached to the recipe said "make 3 X the recipe." Complete the blanks to show the largest equivalent measurement he should use when he triples the recipe.
   (A) 10 lb. sliced apples ______
   (B) 8 oz. sugar ______
   (C) 1/4 c. lemon juice ______
   (D) 1 lb. 4 oz. margarine ______
   (E) 12 oz. flour ______
   (F) 12 oz. rolled oats, uncooked ______
   (G) 2 lb. brown sugar ______

4. Ann is preparing a salad by using the ingredients listed below. Convert the amounts called for in the recipe into the largest measurements to speed up the measuring process.
   (A) 4 qt. lettuce ______
   (B) 2 pts. tomatoes ______
   (C) 2 c. celery ______
   (D) 2 c. radishes ______
   (E) 16 T. oil ______
   (F) 8 oz. vinegar ______
   (G) 3 t. sugar ______
   (H) 3 t. paprika ______

## Activity 20-8 • Short Answer

**Directions**

**Review the common can sizes and their approximate yields by providing the information needed in the following situations.**

1. Mae is to preparing a bean salad. The recipe calls for a No. 10 can of French style green beans. She does not find a No. 10 can but there is a case of No. 303 cans on the shelf. How many No. 303 cans will she need?

2. Joe is preparing a crab salad. The recipe calls for 2 cups of ripe olives. What size of can should Joe open?

3. The recipe that Juan is following for barbecue sauce calls for a No. 10 can of catsup. Juan is going to check the catsup already opened. How many cups of catsup will he need to substitute for the No. 10 can?

4. Sue is preparing meatballs and spaghetti. The recipe calls for 5 3/4 cups tomato sauce. What size of can should she use?

5. Provide the missing information for each of the following:

| Can Size | Approximate Yield |
|---|---|
| a. 6 oz. can | a. ____________ |
| b. ____________ | b. 2 1/2 cup |
| c. ____________ | c. 1 cup |
| d. 32 oz. can | d. ____________ |
| e. No. 303 can | e. ____________ |
| f. ____________ | f. 5 3/4 cups |

## Directions

**Adjust the following recipe to (A) increase and (B) decrease the yield. Write your answers in the space provided for the new yields.**

## Meat Loaf Recipe

| Ingredients | Old Yield (50 Portions) | New Yield (100 Portions) | New Yield (25 Portions) |
|---|---|---|---|
| 1. Ground Beef | 15 lbs. | ________ | ________ |
| 2. Eggs | 1 doz. | ________ | ________ |
| 3. Tomato Sauce | 5 c. | ________ | ________ |
| 4. Onions | 1 lb. | ________ | ________ |
| 5. Parsley | 2 oz. | ________ | ________ |
| 6. Paprika | 2 T. | ________ | ________ |
| 7. Salt | 2 T. | ________ | ________ |
| 8. Pepper | 2 T. | ________ | ________ |

# Activity 20-10 • Identification

**Directions**

**Identify seasonings** used in food preparation. Read the name of each seasoning listed and use the following code to indicate the type of seasoning.

**Types of Seasonings**

Sp= Spice H= Herb S=Salt E=Extract C=Condiment

1. Worcestershire ______
2. Peppercorn ______
3. Clove ______
4. Vanilla ______
5. Sea salt ______
6. Black Pepper ______
7. Soy sauce ______
8. Paprika ______
9. Cinnamon ______
10. Almond ______
11. Parsley ______
12. Ginger ______
13. Horseradish ______
14. Monosodium glutamate ______
15. Chili sauce ______
16. Nutmeg ______
17. Sage ______
18. Oregano ______
19. Bay Leaves ______
20. Prepared horseradish ______

## Activity 20-11 • Short Answer

**Directions**

**Complete** the following exercises by writing your answers in the spaces provided.

1. Dividing food into servings of equal size is referred to as ______________________ .

2. Figure the cost per serving portion for the following items.

| Item | Size | Cost of Item | Serving Size | Cost of Serving |
|---|---|---|---|---|
| (A) Lima beans, *frozen* | 5 lbs. | $3.50 | 4 oz. | |
| (B) Peas, *frozen* | 5 lbs. | $1.60 | 4 oz. | |
| (C) Onions and peas, *frozen* | 3 lb. | $ .34/lb. | 4 oz. | |
| (D) Green beans, *frozen* | 5 lb. | $ .34/lb. | 4 oz. | |
| (E) Corn, *frozen* | 5 lb. | $ .31/lb. | 4 oz. | |

3. Figure the approximate number of serving portions for the following items.

| Item | Size | Size of Portion | Number of Portions |
|---|---|---|---|
| (A) Orange juice | 1 gallon | 5 oz. | |
| (B) Strip sirloin of beef (3 lbs. and 12 oz. lost through boning and trimming) | 17 lbs. | 10 oz. | |
| (C) Ground beef | 50 lbs. | 6oz. | |
| (D) Halibut (7 lbs. and 11 ozs. lost through boning, skinning, and trimming) | 70 lbs. | 6 oz. | |

## Activity 20-12 • Short Answer

**Directions**

**Select an appropriate garnish for the foods listed. In the appropriate columns, (A) write a description of the garnish, and (B) write the reason for using the garnish. Justify the garnish by using the guidelines studied in the text.**

| Foods | (A) Selected Garnishes | (B) Reason for Using the Garnish |
|---|---|---|
| 1. Platter of fish | | |
| 2. Fruit salad | | |
| 3. Vegetable salad | | |
| 4. Chicken salad sandwich | | |
| 5. Cream soup | | |
| 6. Roast beef | | |
| 7. Meat salad | | |
| 8. Bacon, eggs, and potatoes | | |
| 9. Deviled eggs | | |
| 10. Hamburger | | |

# Chapter 21

## Beverages

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 21:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Introduction

Foodservice establishments serve a variety of beverages. The most frequently prepared beverages are coffee and tea. Cocoa and hot chocolate are also available in most foodservice establishments. Some popular beverages require no preparation. These include milk, fruit juices, vegetable juices, and carbonated beverages. Fountain specialties like shakes and malts may also be served. Some foodservice establishments serve alcoholic beverages, which are served *only* by persons who meet minimum age requirements and *only* to patrons who meet minimum age requirements. The beverage station, where both hot and cold beverages are prepared, usually is located in or near the cold food or pantry station. Some establishments locate several beverage pick-up stations in the dining area as well. Use of several beverage pick-up stations provides service personnel with quick access to beverages.

## *Activity 21-1 • Short Answer*

**Directions**

Using the spaces provided below, list the five basic guidelines to follow in the preparation of quality beverages.

1. ______________________________________________

2. ______________________________________________

3. ______________________________________________

4. ______________________________________________

5. ______________________________________________

## *Activity 21-2 • Sentence Completion*

**Directions**

Complete each item by writing the missing word(s) in the spaces provided.

1. Coffee made from ground roasted coffee beans and water is termed ______________ coffee.

2. When using a drip coffee maker, the extraction time is ______________________ .

3. Using ground coffee that is too coarse for the brewing method results in ______________________ coffee.

4. When brewing coffee, water that has an undesirable taste or which is high in chlorine or iron should be filtered through ______________________________________ .

5. Coffee makers need cleaning to remove ______________________ that build up inside and causes the coffee to taste bitter.

6. The flavor and fragrance of coffee deteriorates after the first ______________________ .

7. The "half cups" used to serve strong, black after-dinner coffees are ______________________ .

8. Coffee combined with frothy steamed milk is ______________________________ .

9. Double-strength coffee diluted with melting ice is ______________________________ .

10. Coffee, both caffeinated and decaffeinated, that is often served in individual packages is ______________________ coffee.

## Activity 21-3 • Short Answer

### Directions

It is Kathi's first day as a foodserver at the Jalisco Café. As the manager, you instruct her in the correct brewing methods for coffee and tea. In the spaces provided, write the instructions you expect Kathi to follow when brewing each beverage.

| Coffee Brewing Methods | Tea Brewing Methods |
|---|---|
| 1. ____________ | 1. ____________ |
| 2. ____________ | 2. ____________ |
| 3. ____________ | 3. ____________ |
| 4. ____________ | 4. ____________ |
| 5. ____________ | 5. ____________ |
| 6. ____________ | 6. ____________ |
| 7. ____________ | 7. ____________ |

## Activity 21-4 • Sentence Completion

### Directions

Circle the word that correctly completes each sentence.

1. Steeping is used to brew (Cappuccino, coffee, tea).

2. Iced tea that is immediately refrigerated for cooling develops (acidity, cloudiness, rancidity).

3. Milk that contains less than one percent butterfat is (buttermilk, skim milk, whole milk).

4. Milk that is treated mechanically so that the butterfat will no longer rise to the top is referred to as (buttermilk, chocolate milk, homogenized milk).

5. Chocolate milk has as much butterfat as (buttermilk, skim milk, whole milk).

## Activity 21-5 • Matching

### Directions

Place the letter of each type of beverage from the right column in the blank to the left of the procedure for serving or garnishing in the left corner. Some of the letters will be used more than once. There may be more than one correct letter for each answer.

### Procedures for Serving or Garnishing

_____ 1. Often served with lemon, sugar, and milk.

_____ 2. Usually served with a straw and a long spoon.

_____ 3. Usually served with cream and sugar.

_____ 4. Usually served with lemon and sugar.

_____ 5. Often served in a pre-heated cup.

_____ 6. Sometimes garnished with celery sticks.

_____ 7. Sometimes garnished with whipped cream, marshmallows, shaved chocolate, or cinnamon sticks.

_____ 8. Sometimes garnished with mint leaves, lemon or lime slices or wedges, or strawberries.

_____ 9. In the United States, usually the first beverage to be served to a customer in a seated restaurant.

_____ 10. Occasionally served with an extra pot of hot water for diluting the beverage.

### Types of Beverages

A. carbonated beverages
B. coffee
C. fruit juices
D. hot chocolate and cocoa
E. hot tea
F. iced tea
G. iced water
H. milk
I. milk shakes
J. tomato juice

## Activity 21-6 • Sentence Completion

### Directions

Listed below are basic beverage terms. At the bottom of the page is a description of each term. Write the term in the blank that best completes the description. Each term may be used only once.

### Beverage Terms

beverage brewing demitasse fill line homogenization steeping urn

1. A large coffee maker with a faucet for serving is a(n) _____________________.
2. The process of treating whole milk so that cream does not form is called _____________.
3. The process of extracting coffee flavor with hot water is called _____________________.
4. "Half cup" used to serve espresso is referred to as _____________________.
5. The process of extracting tea flavor with hot water is called _____________________.

# Chapter 22

## Appetizers

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 22:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Introduction

An appetizer is a small amount of food used to stimulate the appetite. Appetizers should be light and tasty, colorful and attractive, fresh and tempting, and served before the main course of a meal.

## Activity 22-1 • Matching

**Directions**

Match each term in the right column with the best description in the left column. Place the letter in the blank provided to the left of the numbered item. Letters may be used only once.

**Description**

_____ 1. Small tasty bits of food served before a meal.

_____ 2. Italian term for hors d'oeuvres.

_____ 3. Small, open-faced sandwiches.

_____ 4. Raw vegetable relishes.

_____ 5. Food mixtures similar to sandwich fillings.

**Terms**

A. antipasto
B. aspic
C. canapés
D. crudités
E. hors d'oeuvres
F. spreads
G. relishes

## Activity 22-2 • Short Answer

**Directions**

Assume that you are a foodservice worker who has been given the responsibility of preparing hors d'oeuvers for a dinner party. Before preparing the hors d'oeuvres, you must determine the type of hors d'oeuvers you are going to make. Use the chart below to help you plan by listing one example of each type of cold hors d'oeuvre and three examples of hot hors d'oeuvers.

**Cold hors d'oeuvres**

(A) Meat: _____________________

(B) Fish: _____________________

(C) Cheese: _____________________

(D) Eggs: _____________________

(E) Vegetables: _____________________

(F) Fruit: _____________________

**Hot hors d'oeuvres**

(A) _____________________

(B) _____________________

(C) _____________________

## Activity 22-3 • Sentence Completion

**Directions**

Fill in the blanks below with the word(s) that best completes the sentence.

1. Canapés are small, open-faced ________________________ .

2. Small pieces of bread, toast, crackers, wafers, chips, or pastries cut into various shapes may serve as the ________________________ of a canapé.

3. The type of bread that is the best for canapé spreads is ________________________ .

4. To make canapés more attractive, an edible ________________________ is often added to the top.

5. Eggs, cheese, fish, meat, and poultry are the primary ________________________ in canapés.

6. A canapé that consists of a thin slice of crustless bread spread with filling, then rolled, chilled, and sliced is a(n) ________________________ .

7. A canapé may be covered with a glaze called a(n) ________________________ .

8. Anchovies, bits of fish, parsley or mint, and vegetables can be used to ________________________ a canapé.

9. A type of canapé made by alternating whole wheat and white breads that are spread with filling is a ________________________ sandwich.

10. Canapés made with sweet breads such as date-nut, banana-nut, or orange-nut are ________________________ sandwiches.

# Activity 22-4 • Matching

## Directions

Place the letter of each type of appetizer in the blank to the left of its description. Each letter may be used more than once.

## Descriptions

____ 1. Food mixtures similar to sandwich fillings.

____ 2. Usually served with raw vegetables, chips, fruit, and bread sticks.

____ 3. Consist of crisp vegetables, pickles, or olives.

____ 4. Served in a dish surrounded by crisp crackers, bread sticks, or tiny biscuit halves.

____ 5. May consist of tart fruit, salad greens, or seafoods.

____ 6. Primary ingredients are often cheese, avocados, clams, anchovies, or shrimp blended with sour cream or softened cream cheese.

____ 7. Includes broth, bouillon, and consommé.

____ 8. Served with lemon wedges or slices and a spicy tomato sauce.

____ 9. Chocolate and caramel are popular ingredients.

____ 10. Vegetable juice garnished with a sprig of mint, a celery stick, or a green olive.

## Types of Appetizers

A. appetizer salads
B. beverage cocktails
C. dips
D. fruit cocktails
E. relishes
F. seafood cocktails
G. soups
H. spreads

# Activity 22-5 • Matching

**Directions**

Assume that you are a foodservice manager training Emmanuel, a new employee, to prepare, hold, and store appetizers. Emmanuel has very little knowledge about appetizers; therefore, you must provide very detailed and explicit instructions for him. Read the following questions and write your responses in the spaces provided.

1. What are the five guidelines that you would instruct Emmanuel to follow when preparing appetizers in an assembly line?

   (A) ______________________________

   (B) ______________________________

   (C) ______________________________

   (D) ______________________________

   (E) ______________________________

2. What two sanitation measures would you encourage Emmanuel to practice while preparing appetizers?

   (A) ______________________________

   (B) ______________________________

3. What three suggestions would you give Emmanuel for holding and storing appetizers?

   (A) ______________________________

   (B) ______________________________

   (C) ______________________________

# Chapter 23

## Soups and Sauces

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 23:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Introduction

Many soups and sauces have a common beginning. They are made from stocks, the liquid in which meat, fish, or poultry scraps have been cooked together with a variety of vegetables and flavorings. Others have milk or other ingredients as the base. Soups and sauces may be thick or thin and are served hot or cold. Convenience forms of many soups and sauces save preparation time in foodservice establishments.

# Activity 23-1 • Short Answer

**Directions**

Read the following items. Answer the following questions in the spaces provided.

1. List the four steps in preparing stocks from scratch.

(A) ____________________

(B) ____________________

(C) ____________________

(D) ____________________

2. Explain the three-step procedure for clarifying stocks.

(A) ____________________

(B) ____________________

(C) ____________________

3. What are the ingredients in each of the following kinds of stocks?

(A) White stock: ____________________

____________________

(B) Brown stock: ____________________

____________________

(C) Fish stock ____________________

____________________

## Activity 23-2 • Multiple Choice

**Directions**

Listed below are descripions of various soups or foods served with soups. Choose the best answer from the multiple choice listed under each item. Place the letter in the blank to the left of the number.

_____ 1. A soup containing milk and potatoes with fish, shellfish, and/or vegetables.
- A. Bouillon
- B. Chowder
- C. Roux
- D. Vichyssoise

_____ 2. A cold, smooth, beet soup with sour cream that was first introduced in Russia.
- A. Borscht
- B. Consommé
- C. Gazpacho
- D. Roux

_____ 3. A clear broth made from bouillon and categorized as a thin soup.
- A. Bouillabaise
- B. Broth
- C. Chowder
- D. Consommé

_____ 4. A cream soup made from potatoes, onions, leeks, chicken stock, and cream and categorized as a cold soup.
- A. Borscht
- B. Bouillabaisse
- C. Gazpacho
- D. Vichyssoise

_____ 5. A specialty soup which originated in France.
- A. Bisques
- B. Bouillon
- C. Bouillabaise
- D. Vichyssoise

_____ 6. A cold, sweet soup from Norway.
- A. Borscht
- B. Fruit
- C. Gazpacho
- D. Roux

## Activity 23-2 (continued) • Muliple Choice

_____ 7. A thick soup made from a milk base that is combined with chicken or beef stock.

A. Chowder
B. Consommé
C. Convenience
D. Cream

_____ 8. A thick, hearty soup made from ingredients that are forced through a food mill or china cap.

A. Puree
B. Roux
C. Specialty
D. Vegetable

_____ 9. A mixture of equal parts of fat and flour used to thicken soups.

A. Bisques
B. Consommé
C. Cream
D. Roux

_____10. Small, toasted cubes of bread often served with soup.

A. Bisques
B. Croutons
C. Gazpacho
D. Roux

_____11. A thick soup made from shellfish or vegetables and prepared like cream soups.

A. Bisques
B. Chowder
C. Consommé
D. Vichyssoise

_____12. A thin soup that has not been clarified.

A. Roux
B. Bouillabaise
C. Broth
D. Consommé

_____13. A type of soup frequently used in foodservice operations to save time and energy.

A. Cold
B. Convenience
C. Puree
D. Specialty

_____ 14. A type of soup that is especially popular in the summer.
A. Bisque
B. Chowder
C. Cold
D. Cream

_____ 15. A soup made with diced or cubed vegetables and a stock base.
A. Borscht
B. Gazpacho
C. Chowder
D. Vegetable

_____ 16. A cold soup from Spain.
A. Borscht
B. Consommé
C. Gazpacho
D. Vichyssoise

_____ 17. A type of soup prepared from a stock or milk base thickened by the addition of starch or starchy foods.
A. Specialty
B. Thick
C. Vegetable
D. Vichyssoise

_____ 18. A thin soup that is made from beef, chicken, or lamb and is the French word for broth.
A. Bisques
B. Bouillon
C. Bouillabaise
D. Vichyssoise

_____ 19. A hearty soup made from a stock, milk, or combination base and meant to be served as a meal.
A. Specialty
B. Thick
C. Vegetable
D. Vichyssoise

_____ 20. A soup often made in a double boiler to prevent scorching.
A. Bisques
B. Consommé
C. Convenience
D. Cream

## Activity 23-3 • True/False

**Directions**

**Read each statement.** If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Thin soups are hearty soups meant to be served as meals.

T F 2. Cold soups should be served in pre-chilled dishes that may be surrounded by cracked ice.

T F 3. Garnishes, such as sour cream and lemon, lime, and cucumber slices, are more appropriate for hot soups than for cold soups.

T F 4. For holding, a soup should be kept at a temperature between 40°F and 140°F.

T F 5. Garnishes such as chopped parsley, chives, or chervil are suitable for vegetable soups.

T F 6. Some soups should be served lukewarm.

T F 7. A puree is suitable for the main dish of a meal.

T F 8. Specialty soups are meant to be served as appetizers.

T F 9. Crisp crackers, thin brown toast, bread, pastry, bread sticks, and croutons are appropriate accompaniments served with soups.

T F 10. Parsley, paprika, onion rings, and bacon bits are appropriate and attractive soup garnishes.

# Activity 23-4 • Matching

## Directions

Match the type of sauce in the right column with its description in the left column. Place the letter of the type of sauce in the blank to the left of the description. Letters may be used only once or not at all.

## Descriptions

____ 1. Rich, uncooked sauces made with beaten egg whites, whipped cream, or both.

____ 2. Variations are marinara sauce, Spanish sauce, Creole sauce, and cacciatore sauce.

____ 3. Sweetened mixtures of milk and eggs.

____ 4. Another term for this sauce is béchamel.

____ 5. An example is meuniere.

____ 6. Easily prepared sauce usually sweetened with powdered sugar and flavored with vanilla.

____ 7. Meat-flavored sauces made from the drippings of roasted meat.

____ 8. Made from a base of fruit, fruit juices, or vinegar.

____ 9. Made from butter, confectioner's sugar, eggs, vanilla, and flavoring.

____ 10. Examples are Hollandaise and bearnaise.

## Types of Sauces

A. brown
B. butter
C. cream
D. custard
E. egg
F. gravies
G. hard
H. sweet-sour
I. supreme or foamy
J. tomato
K. whipped cream
L. white

# Activity 23-5 • Sentence Completion

**Directions**

To review the ingredients, preparation methods and uses of the types of sauces, complete the following activity. For each item below, write the word(s) in the blank provided that best completes the sentence.

1. Brown sauce and its variations are usually served with ____________________ .

2. A pastry bag is usually used to apply ____________________ to a dessert.

3. *Béchamel* is another term for ____________________ .

4. A tomato or mayonnaise base is usually used in preparing ____________________ .

5. Extremely perishable sauces that are a frequent cause of food poisoning in foodservice establishments are ____________________ .

6. The mixture of cream and egg yolks used in making secondary white sauces is called a ____________________ .

7. Brown gravy, cream gravy, giblet gravy, onion gravy, and vegetable gravy are variations of ____________________ .

8. Desserts and some meats are served with ____________________ .

9. Velouté, French for "velvety," is another term used for ____________________ .

10. A simple fruit sauce can be made from a fruit ____________________ .

# Chapter 24

# Salads

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 24:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food preparation according to industry standards.

## Introduction

Salads add variety, crispness, color, and refreshing flavors to meals. Some salads are simple, some are elaborate. They usually contain combinations of vegetables, fruits, or both. A hearty salad includes protein foods, such as beans, peas, cheese, fish, meat, poultry, or eggs. Some salads are made with a gelatin base.

## Activity 24-1 • Sentence Completion

**Directions**

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. Peach halves studded with cloves are an example of a(n) ____________________ salad.

2. Gelatin salads are a type of ____________________ salad.

3. Production time and cost can be saved in foodservice by using ______________________ salads.

4. Salad mixes that require only the addition of water are ______________________ salad mixes.

5. An example of a gelatin salad with a vegetable juice base is ____________________.

## Activity 24-2 • Matching

**Directions**

Complete the following activity to identify the basic types of salad dressings and to review the preparation procedures and uses of each. Place the letter of each salad dressing in the blank to the left of its correct description. Each letter may be used more than once.

**Salad Dressings**

A. cooked
B. French
C. mayonnaise

**Descriptions**

_____ 1. Made from an oil base.

_____ 2. Used with meat, fish, poultry, cooked vegetables, and some fruit salads.

_____ 3. Thickened with egg, cornstarch, or flour instead of an oil emulsion.

_____ 4. Used in potato salads, coleslaw, and many meat, poultry, and fish salads.

_____ 5. Made with a permanent emulsion of eggs, oil, vinegar, and seasonings.

_____ 6. May be thin or thick depending on whether or not a binder is used.

_____ 7. May be mixed with chopped onion, egg, cheese, and chopped pickle.

_____ 8. Used on greens, vegetables, and fruits.

_____ 9. Thick and tart.

_____ 10. Must be spooned rather than poured.

## Activity 24-3 • Short Answer

### Directions

**Complete** the menu uses of salads box below. In the designated columns, (A) give the type of salad, **(B) a description** of the salad, and (C) give an example of that salad type. NOTE: Two answers have been provided for you.

### Menu Uses of Salads

| (A) Types of Salad | (B) Descriptions | (C) Examples |
|---|---|---|
| 1. Accompaniment | 1. | 1. |
| 2. | 2. | 2. |
| 3. | 3. | 3. Chef's Salad |
| 4. | 4. | 4. |

## *Activity 24-4 • Short Answer*

Directions

**Complete the chart below with information about each of the salad ingredients listed in the first column. In the second column, summarize the preparation procedure for each salad ingredient listed. In the third column, summarize the storage procedure for each ingredient.**

| Salad Ingredients | Preparation Procedures | Storage Procedures |
|---|---|---|
| 1. Greens | 1. | 1. |
| 2. Carrots | 2. | 2. |
| 3. Tomatoes | 3. | 3. |
| 4. Cooked Vegetables | 4. | 4. |
| 5. Fresh Berries | 5. | 5. |
| 6. Apples | 6. | 6. |
| 7. Canned Fruits | 7. | 7. |
| 8. Hard-cooked eggs | 8. | 8. |
| 9. Roquefort Cheese | 9. | 9. |
| 10. Meat, Poultry, or Fish | 10. | 10. |

# Activity 24-5 • Case Studies

**Directions**

The following case studies refer to the procedures for preparing, serving, garnishing, and storing salads. Respond to the questions in the following case studies and record your answers in the blanks provided.

## Case Study #1

(A) Analisa is a foodservice worker with the responsibility of preparing tossed salads for customers. She desperately needs your advice on how to (1) avoid wilting the ingredients, (2) prevent bruising, (3) preserve crispness, and (4) prevent loss of crispness. What suggestions will you give her?

1. Wilting: __________
2. Bruising: __________
3. Cripness: __________
4 Loss of Crispness: __________

(B) Analisa assembles the salads by herself. Her employer has asked her to use a step-by-step procedure to increase production. What five steps can you advise Analisa to use?

Step 1: __________
Step 2: __________
Step 3: __________
Step 4: __________
Step 5: __________

## Case Study #2

Pablo is having trouble thinking of a suitable garnish and an appropriate topping to serve with the tossed salad he has just prepared. What are three examples of both (1) garnishes and (2) toppings that you can think of?

| 1. Garnishes: | 2. Toppings |
|---|---|
| a. __________ | a. __________ |
| b. __________ | b. __________ |
| c. __________ | c. __________ |

## Case Study #3

(A). Chien is unsure of the procedure he should follow to store salad greens and he also is wondering what to do with the leftover chicken salad. What procedures for storing these products would you encourage him to follow?

1. Storing salad greens:
   a. __________
   b. __________
2. Left-over chicken salad: __________

__________

(B). Chien is considering putting the salad dressing in the freezer to save space in the refrigerator. Should he do this? __________ Why? __________

__________

# Chapter 25

## Sandwiches

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 25:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food preparation according to industry standards.

### Introduction

Sandwiches are one of the most popular foods sold in foodservice. They are sold at sandwich counters, in vending machines, in fast-food establishments, and in seated-service restaurants. Sandwiches are especially popular at lunch, but are also eaten for dinner and snacks. Breakfast sandwiches have recently gained popularity.

Sandwiches are quick, filling, and easy to eat. They may be hearty enough to be a meal or snack by themselves, or they may be served with other foods, such as French fries, vegetables, or salads, to complete a nutritious meal. Small sandwiches may be used as appetizers or party refreshments.

## *Activity 25-1 • Sentence Completion*

**Directions**

Complete the sentences listed below by using the best response from the word bank. Write your response in the blanks provided. Each word may be used once or not at all.

**Word Bank**

- appetizers
- breakfast
- dinner
- nutritious
- popular
- quick
- vending machines

1. Foodservice establishments serve many sandwiches making them ____________________ with customers.

2. Sandwiches can be bought at sandwich counters, fast food establishments, in seated-service restaurants and from ____________________ .

3. Small sandwiches may be served before a meal as ____________________ .

4. People enjoy sandwiches for lunch and in the evenings for ____________________ .

5. When served with soups, vegetables, or salads, sandwiches make a ____________________ meal.

## *Activity 25-2 • Matching*

**Directions**

Place the letter of each type of sandwich in the blank to the left of its description. Each letter may be used more than once.

**Descriptions**

_____ 1. A sandwich made with two slices of bread.

_____ 2. A very small open-faced sandwich.

_____ 3. Examples include chicken salad and peanut butter with jelly.

_____ 4. A sandwich made with one slice of bread.

_____ 5. Toasted cheese sandwiches are a popular type.

_____ 6. A small, usually sweet sandwich.

_____ 7. Examples include submarines and pitas.

_____ 8. A sandwich made with three slices of bread.

_____ 9. A type of hors d'oeuvre.

_____ 10. Pocket sandwiches are an example.

**Types of Sandwiches**

A. canapé
B. club or decker
C. cold
D. hot
E. open-faced
F. regular
G. specialty
H. tea

## Activity 25-3 • Short Answer

**Directions**

**Read** the following items. Write your responses in the blanks provided.

1. List three characteristics of bread that are desirable in breads used for sandwiches.

(A) ____________________

(B) ____________________

(C) ____________________

2. Give two reasons why fresh bread is unsuitable for making good sandwiches.

(A) ____________________

(B) ____________________

3. Define "stale" as it applies to bread. ____________________

4. Explain how refrigeration affects the texture of bread. ____________________

____________________

5. Name two popular types of yeast breads.

(A) ____________________

(B) ____________________

6. Name one type of quick bread. ____________________

## *Activity 25-4 • Compare and Contrast*

**Directions**

**Complete the boxes below. First, compare the ways in which sandwich fillings and spreads are alike. Then, contrast the ways in which they are different. Write all responses on the blanks provided.**

**Fillings**

**Spreads**

**How alike?**

____________________________________________

____________________________________________

____________________________________________

____________________________________________

____________________________________________

____________________________________________

____________________________________________

**How different?**

**Fillings**

____________________ ↔

____________________ ↔

____________________ ↔

____________________ ↔

____________________ ↔

____________________ ↔

____________________ ↔

**Spreads**

____________________

____________________

____________________

____________________

____________________

____________________

____________________

## Activity 25-5 • Short Answer

**Directions**

Read each item. Write your responses in the blanks provided.

1. List the two main steps in sandwich preparation.
   Step 1: ____________________
   Step 2: ____________________

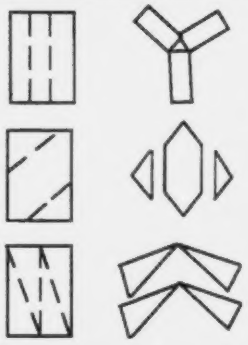
2. List four tools or utensils needed at a sandwich preparation center. Explain the use of the listed tool or utensil.
   (A) ____________________ Use: ____________________
   (B) ____________________ Use: ____________________
   (C) ____________________ Use: ____________________
   (D) ____________________ Use: ____________________

3. List the ten steps that should be followed when preparing a sandwich with a moist filling.
   - ____________________
   - ____________________
   - ____________________
   - ____________________
   - ____________________
   - ____________________
   - ____________________
   - ____________________
   - ____________________
   - ____________________

## Activity 25-6 • Illustrating

**Directions**

The illustration below shows ways to cut sandwiches and arrange them in an eye-appealing manner. Use your imagination to create some new and interesting ways to cut and arrange sandwiches. Draw your designs in the space provided next to the illustrations.



## Activity 25-7 • Short Answer

**Directions**

Connie is employed at a foodservice establishment. Her supervisor has assigned her to the sandwich preparation area. Follow her through her first day's activities and answer her questions about preparing, garnishing, serving, and storing cold sandwiches. Write you answers in the blanks provided.

1. Connie's supervisor told her that it is very important that she use the amount of spread and filling specified. If more than the specified amount is used, there will not be enough ingredients for the required number of sandwiches. If not enough is used, the customer will be dissatisfied. Suppose Connie used 3 1/2 T. of spread per sandwich instead of the 2 1/3 T. specified. Instead of being able to make 102 sandwiches per gallon of filling, she would be able to make only 73. If the sandwiches sold for $1.50 each, how much money would the business lose?
   $ ____________________

2. After the sandwiches were made, Connie had the following questions:
   (A) What garnishes can be used on the open-faced sandwiches? ____________________
   ____________________

   (B) What can be used to garnish the regular sandwiches? ____________________
   ____________________

   (C) How should the garnishes be arranged for the regular sandwiches? ____________________
   ____________________

   (D) What can be used to garnish the sweet sandwiches? ____________________
   ____________________

   (E) What vegetables or other food could be served with the sandwiches? ____________________
   ____________________

   (F) What should be used to wrap sandwiches? ____________________

   (G) Should the sandwiches be cut in a certain shape? ____________________
   ____________________

   (H) For prepared sandwiches that require refrigeration, how should they be stored? (2 steps)
   1. ____________________
   ____________________
   2. ____________________
   ____________________

# Chapter 26

# Meat, Poultry, and Fish

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 26:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

## Introduction

The term entrée refers to the main dish of the meal. The most common entrées feature meat, poultry, or fish.

Americans eat large quantities of meat. Steaks and hamburgers are especially popular. Many other types of meat are also served in foodservice establishments.

Meats have a variety of menu uses. Used alone they are often the main dish for a meal. Meats such as steaks, roasts, and chops are popular for dinner. For lunch or supper, servings are smaller and meats are often mixed with other foods to create a lighter main dish. Foods such as macaroni, noodles, spaghetti, rice, and vegetables can be combined with meat to create a main dish. Casseroles, soups, salads, and sandwiches containing meat are also used as main dishes. Popular breakfast meats include, sausage, bacon, and ham.

# *Activity 26-1 • Matching*

## Directions

Place the letter of each type and cut of meat in the blank to the left of its description. Each letter may be used only once.

## Descriptions

_____ 1. Meat from immature cattle under four months of age.

_____ 2. Small flecks of fat throughout the muscle.

_____ 3. Cuts of meat including the round, rump, flank, and chuck of beef.

_____ 4. Meat treated with a mixture of salt, sugar, and spices. It is often smoked.

_____ 5. Cuts of meat including the loin and ribs of beef, veal, lamb, and pork.

_____ 6. Meat from the flesh of young sheep.

_____ 7. Cuts of meat including the liver, kidney, heart, tongue, and brains.

_____ 8. Meat from fully-grown steers.

_____ 9. Primary factor affecting the tenderness of meat.

_____ 10. Meat from the flesh of pigs or hogs.

## Types and Cuts of Meats

A. beef
B. marbling
C. fat
D. lamb
E. less tender cuts
F. pork
G. cured meat
H. tender cuts
I. variety meats
J. veal

# Activity 26-2 • Short Answer

**Directions**

To review the forms of meat and the procedures for selecting, handling, storing, and preparing meat, complete the following activity. Write your answer to each question in the space provided.

1. In the following blanks, list and describe the four forms of meat:

| | Forms of Meat | | Descriptions |
|---|---|---|---|
| a. | ____________ | a. | ____________ |
| b. | ____________ | b. | ____________ |
| c. | ____________ | c. | ____________ |
| d. | ____________ | d. | ____________ |

2. Explain the following factors that should be considered when selecting meats:
   (A) Inspection: ____________
   (B) Grading: ____________

3. Define the following signs of quality that can be looked for when selecting meat:
   (A) Conformation: ____________
   (B) Finish: ____________

4. The size and shape of the bone in a cut of meat aids in identifying its location. Beside each bone shape below, (A) name its location and (B) label the cut as tender or less tender.
   - round (A) ____________ (B) ____________
   - long (A) ____________ (B) ____________
   - curved (A) ____________ (B) ____________
   - T-shaped (A) ____________ (B) ____________

5. Describe the quality appearance for each of the following:
   - Beef ____________
   - Veal ____________
   - Pork ____________
   - Lamb ____________

## Activity 26-2 (continued) • Short Answer

6. Describe the proper handling and storing procedure for each of the following:

- Fresh meat ______________________________
- Prepackaged meat ______________________________
- Cured and ready-to-eat meats ______________________________
- Frozen meats ______________________________
- Canned meats ______________________________
- Left over meats ______________________________

## Activity 26-3 • Short Answer

**Directions**

Review the guidelines used when testing meats for doneness. Complete the box below by supplying the correct internal temperatures for each type of meat.

| Meat | Internal Temperatures |
|---|---|
| 1. Beef and lamb | 1. |
| (A) medium | (A) ____________ °F |
| (B) well-done | (B) ____________ °F |
| 2. Pork | 2. ____________ °F |
| 3. Veal | 3. ____________ °F |
| 4. Ground meat | 4. ____________ °F |

## Activity 26-4 • Multiple Choice

### Directions

For each item listed below select the best answer from the choices provided beneath each sentence. Place the letter of the response in the blank to the left of the numbered item.

_____ 1. The method of cooking meat by direct heat from hot coals, a gas flame, or an electric element is __________ .
A. baking
B. braising
C. broiling
D. roasting

_____ 2. *Fricasseeing* is another name for _______ .
A. baking
B. braising
C. broiling
D. roasting

_____ 3. The method of cooking whereby the meat is floated in hot fat is __________ .
A. braising
B. deep frying
C. stewing
D. roasting

_____ 4. Cooking meat by grilling or panbroiling is the ____________ method.
A. braising
B. deep frying
C. dry heat
D. moist heat

_____ 5. The cooking method that requires covering the meat with water or other liquid and simmering until tender is called __________ .
A. baking
B. braising
C. roasting
D. stewing

_____ 6. The method of cooking that is best used for cooking less tender cuts of meat is __________ .
A. baking
B. broiling
C. dry-heat
D. moist heat

_____ 7. The cooking method that is done in a 300° - 350°F oven without the addition of moisture is __________ .
A. braising
B. broiling
C. roasting
D. stewing

_____ 8. Cooking meats in their own juices or with a small amount of added liquid is ____________ .
A. braising
B. baking
C. deep frying
D. stewing

_____ 9. Cooking meat uncovered and without the addition of water is the ____________ method.
A. deep frying
B. dry heat
C. moist heat
D. stewing

_____ 10. The distance of the meat from the heat source controls the cooking temperature when ____________ .
A. braising
B. broiling
C. roasting
D. stewing

# *Activity 26-5 • Matching*

## Directions

**Place the letter of each poultry classification in the blank to the left of its description. Each letter may be used more than once.**

## Descriptions

_____ 1. Heavy, mature birds weighing 4 to 6 pounds.

_____ 2. Male birds weighing over 3 1/2 pounds.

_____ 3. Birds that are meaty and have some fat beneath the skin.

_____ 4. Desexed male chickens weighing 4 to 7 pounds.

_____ 5. Very young birds of either sex weighing 1 to 2 1/2pounds.

_____ 6. Birds having flavorful meat, but less tender than that of younger birds.

_____ 7. Young birds of either sex weighing 2 1/2 to 3 1/2 pounds.

_____ 8. Birds with a high proportion of white meat that are usually prepared by roasting.

_____ 9. Birds that are usually quartered or cut into smaller serving pieces depending on their size and use.

_____ 10. Birds that are small in size with little meat in proportion to the bone.

## Poultry Classifications

A. capons
B. broilers
C. fryers
D. roasters
E. stewing hens

## Activity 26-6 • Sentence Completion

### Directions

The following items relate to market forms, inspection, and grading of poultry. Complete each sentence by writing the best response in the blank provided.

1. Whole birds such as turkeys and Cornish hens are often sold in ______________________ form.

2. Poultry that is dressed and ready to cook is sold ______________________.

3. All poultry shipped between states must be inspected and approved by ______________________.

4. A metal disk clipped to the bird's wing, a paper tag stuck on the bird, or a printed emblem on the wrapping are all symbols of ______________________.

5. Federal poultry grading is based on five factors: fleshing, fat, cleanliness, condition, and ______________________.

6. Poultry skin that is free from pin feathers and down will meet standards of ______________________.

7. Whether the poultry skin is plump and firm looking can be determined through a check of the bird's ______________________.

8. Grade C poultry has less flesh and ______________________ than the higher grades.

9. Indications that the bird is free from tears, cuts, bruises, blemishes, or defects such as disjointed or broken bones can be made from a check of the bird's ______________________.

10. The general form, shape, and body contour of the bird is referred to as its ______________________.

## *Activity 26-7 • True/False*

**Directions**

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Fresh poultry should be tightly wrapped before refrigeration.

T F 2. Poultry can be stored up to seven days in the refrigerator.

T F 3. Poultry should be stored in the coldest part of the refrigerator.

T F 4. If wrapped tightly, poultry may be stored in the freezer at 0°F for up to one year.

T F 5. It is necessary to defrost frozen poultry before it is cooked.

T F 6. Canned poultry should be stored in a cool, dry place.

T F 7. Portioning and breading are common conveniences in fresh poultry.

T F 8. The amount of pre-preparation needed by poultry depends largely on whether the birds must be portioned before use.

T F 9. Giblets should be removed from the body cavity before the bird is cooked.

T F 10. Poultry should be thoroughly washed under hot running water.

## Activity 26-8 • Short Answer

**Directions**

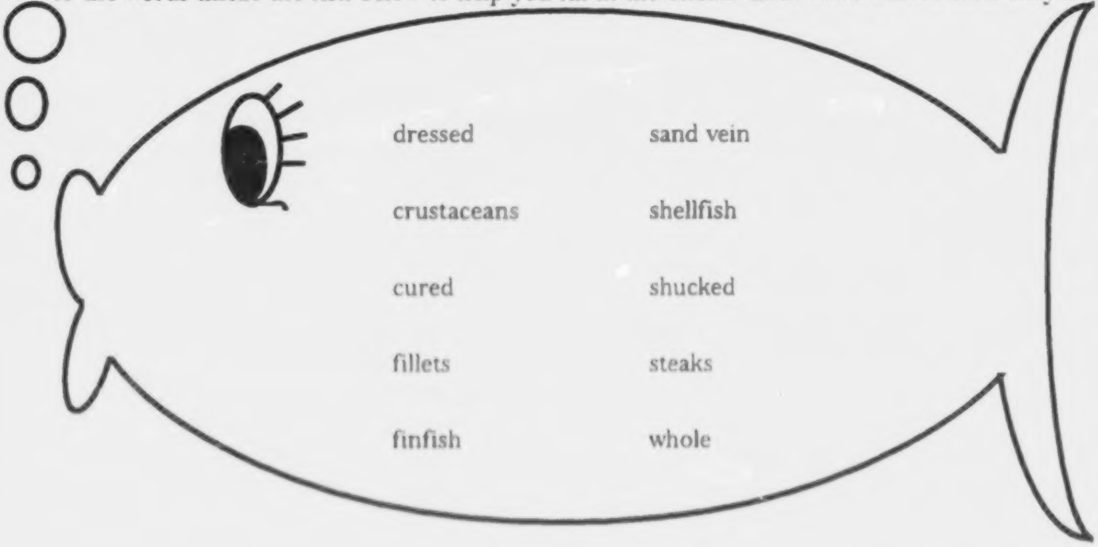
Complete the chart below with the missing information regarding cooking methods for poultry. In column (A), determine whether the cooking method is a moist heat method or a dry heat method. In column (B), list the characteristics of the birds cooked by each method. And, in column (C), summarize the procedure for each cooking method. NOTE: The broiling method is provided as an example.

| Cooking Method | (A) Heat Method | (B) Characteristics of Birds | (C) Cooking Procedures |
|---|---|---|---|
| 1. Braising | | | |
| 2. Broiling | Dry Heat | Very young chickens and turkeys. | Chickens may be halved or quartered. Turkeys are quartered. The wing is folded back on the shoulder to hold it in place. Pieces are placed skin side down on the broiler. Chickens are basted and turned often to ensure even browning, |
| 3. Frying | | | |
| 4. Roasting | | | |
| 5. Stewing | | | |

## *Activity 26-9 • Sentence Completion*

**Directions**

**For each item below, write the word(s) in the blank provided that best completes the sentence. Refer to the words inside the fish below to help you fill in the blanks. Each word will be used only once.**



1. Fish sold as soon as it is taken from the water with entrails intact is referred to as ______________ .

2. A fish with the internal organs, scales, head, tail, and fins removed is referred to as ______________ .

3. Cross section slices from a fish are called ____________________ .

4. Boneless lengthwise cuts from the sides of fish along each side of the backbone are ______________ .

5. Fish that have been salted, smoked, or pickled are referred to as ____________________________ .

6. Lobsters and crabs are a type of shellfish called ____________________________ .

7. The black strip along the back of a shrimp is called the ____________________________ .

8. Oysters and clams that have been removed from the shell are sold ____________________________

9. Canned salmon, tuna, and sardines are popular types of ____________________________ .

10. Canned oysters, clams, lobsters, crab, scallops, and shrimp are popular types of________________ .

## Activity 26-10 • Short Answer

**Directions**

To review the procedures for selecting, handling, storing, and preparing fish and to identify the menu uses and convenience forms of fish, answer the following questions. Use the blanks provided to record your response.

1. List five characteristics that can be used to judge the freshness of finfish.
   (A) ______
   (B) ______
   (C) ______
   (D) ______
   (E) ______

2. List one characteristic that can be used to judge the freshness of each of the following shell fish.
   - Shrimp: ______
   - Shucked oysters/clams: ______
   - Live oysters/clams: ______
   - Live lobsters: ______
   - Scallops: ______

3. Name three factors that influence the method used for cooking fish.
   (A) ______
   (B) ______
   (C) ______

4. Describe the handling and storage procedure for each of the following.
   - Fresh fish: ______
   - Frozen fish: ______
   - Canned fish: ______

5. Summarize the pre-preparation procedure for each of the following shellfish.
   - Lobsters/crabs: ______
   - Shrimp: ______
   - Clams: ______
   - Oysters: ______

# Activity 26-11 • Matching

## Directions

Select the appropriate cooking method(s) for each type of fish listed below. More than one answer may apply to each type of fish.

## Types of Fish

____ 1. Clams

____ 2. Crab

____ 3. Fat finfish

____ 4. Steaks or fillets

____ 5. Large, whole finfish

____ 6. Lean finfish

____ 7. Lobsters

____ 8. Oysters

____ 9. Scallops

____ 10. Large shrimp

## Cooking Methods

A. baking
B. boiling
C. broiling
D. deep-fat frying
E. poaching
F. sautéing
G. steaming
H. stewing

# Chapter 27

## Eggs and Cheese

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 27:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food preparation according to industry standards.

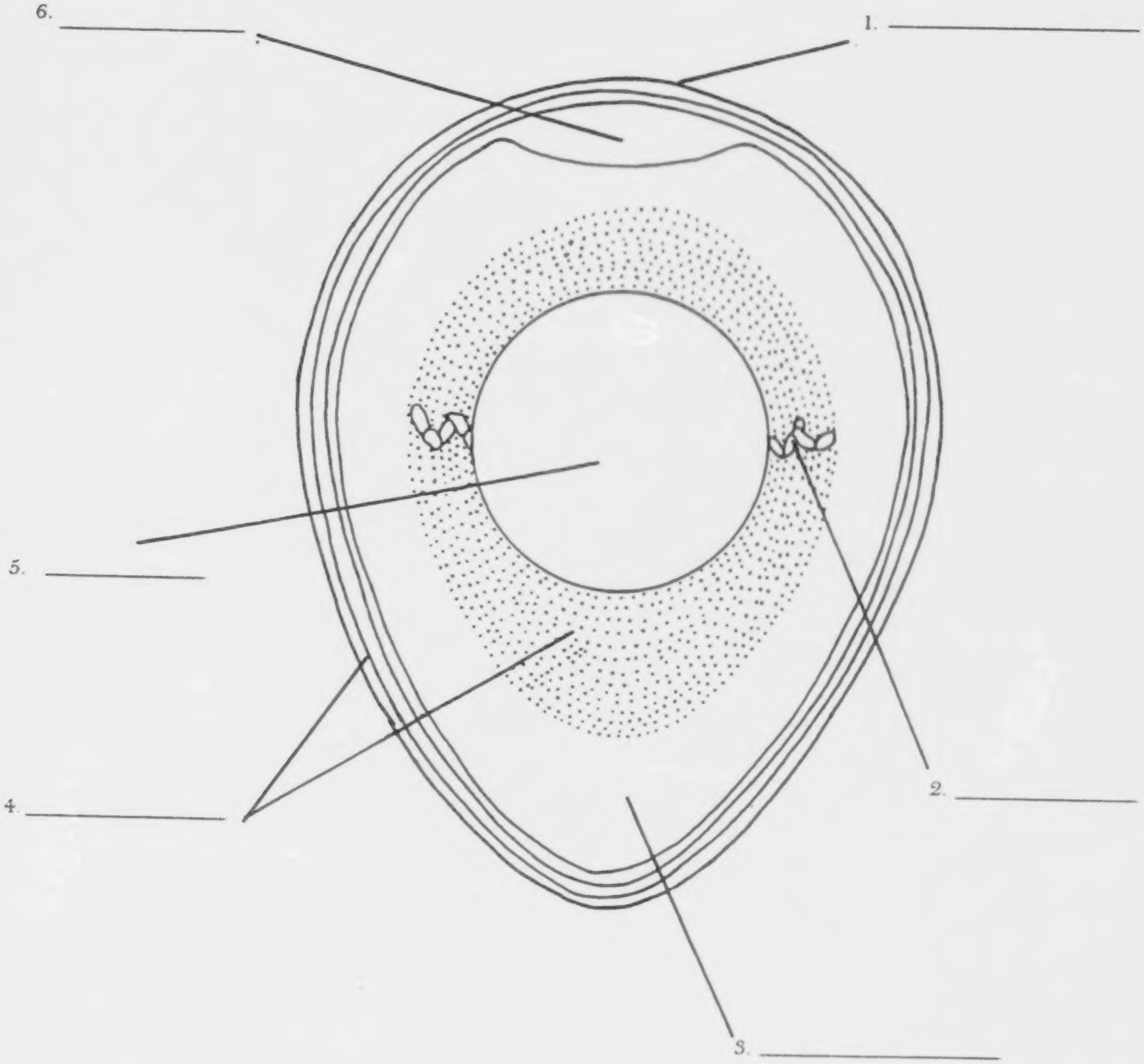
### Introduction

Eggs and cheese are important both as main dishes and as ingredients. In addition, both can be used to garnish other foods.

## Activity 27-1 • Labeling

### Directions

**Label the diagram of the egg below. Write the terms in the spaces provided.**



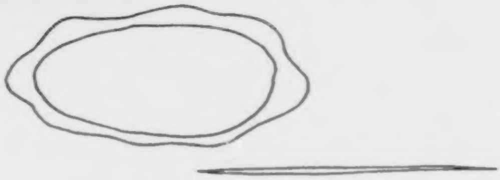
# *Activity 27-2 • Labeling*

## Directions

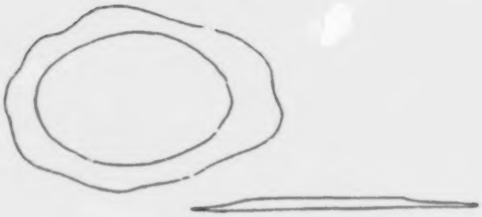
**Write the** number of each grade of egg in the blank to the left of the picture that best illustrates that grade of egg. NOTE: The illustration shows both a top view and a side view of each egg.

### Illustrations of Eggs

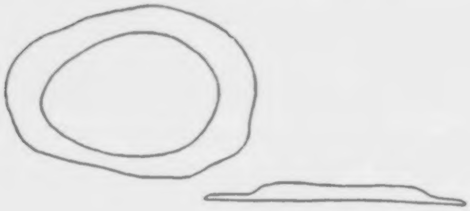
_____ (A)



_____ (B)



_____ (C)



### Grades of Eggs

1. **Grade AA**
2. Grade A
3. Grade B

Justify your answers to this activity by listing two qualities or characteristics that you used to determine the grade of each egg above.

(A) ______________________________

(B) ______________________________

(C) ______________________________

## Activity 27-3 • True/False

**Directions**

**Determine** whether each of the following statements is **True** or **False**. Circle the **T** for all **True** statements and the **F** for all **False** statements. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Dried eggs are available whole, yolks only, or whites only.

T F 2. Eggs may be purchased in fresh, frozen, or dried form.

T F 3. Fortified eggs are mixtures with more egg whites than egg yolks.

T F 4. Jumbo eggs weigh approximately 15 ounces per dozen.

T F 5. Standards of quality and freshness have been established by the Food and Drug Administration.

T F 6. Thawed frozen eggs and reconstituted dried eggs are highly perishable.

T F 7. Thaw frozen eggs by letting them stand at room temperature.

T F 8. The size of the egg has a direct influence on its quality.

T F 9. Unopened packages of dried eggs should be stored in a cool, dry place or in the refrigerator.

T F 10. *Freshness* refers to the age of the egg.

# Activity 27-4 • Matching

## Directions

Match the functions of eggs to the products. Place the letter of the function of eggs in the blank to the left of the product. Each letter may be used more than once.

## Products

________ 1. Soup stock

________ 2. Custards

________ 3. Meat loaf

________ 4. Meringues

________ 5. Mayonnaise

________ 6. Fish fillets

________ 7. Fluffy omelets

________ 8. Sauces

________ 9. Cutlets

________ 10. Salmon croquettes

## Functions of Eggs

A. binder
B. clarifier
C. coating
D. emulsifier
E. leavening
F. thickener

## Activity 27-5 • Short Answer

**Directions**

Respond to the following items by placing your answers in the spaces provided.

1. List three food items for which hard-cooked eggs may be used as a garnish.
   (A) ____________________
   (B) ____________________
   (C) ____________________

2. For the following egg dishes, (1) identify whether the eggs used in the product are poached, hard-cooked, baked, or beaten. Then, (2) describe the proper procedure for serving and garnishing the egg dishes.
   (A) Eggs Benedict:
   1. ____________________
   2. ____________________
   (B) Western-style:
   1. ____________________
   2. ____________________
   (C) Eggs Florentine:
   1. ____________________
   2. ____________________
   (D) Eggs a la goldenrod:
   1. ____________________
   2. ____________________

3. Describe two cooking methods for Eggs Mornay.
   (A) ____________________
   ____________________
   (B) ____________________
   ____________________

4. List five methods for adding variety, flavor, and texture to scrambled eggs.
   (A) ____________________
   (B) ____________________
   (C) ____________________
   (D) ____________________
   (E) ____________________

5. Identify two types of garnishes used for omelets.
   (A) ____________________
   (B) ____________________

6. For deviled eggs, (A) describe the preparation method, and (B) name one type of garnish.
   (A) ____________________
   (B) ____________________

## Activity 27-6 • Sentence Completion

**Directions**

Complete the following sentences by placing the best response in the blank provided.

1. When cooking eggs, the simmering point is just below the ________________ point.
2. Eggs cooked in a steamer at 5-pounds of pressure, then plunged at once into cold water are ________________.
3. Cooling eggs immediately after cooking helps to prevent ________________.
4. Eggs cooked in a small amount of fat over very low heat are ________________.
5. Eggs that are cooked without turning, with runny yolks, and whites that are firm are "eyes open" or ________________.
6. Eggs that are turned over while frying with the whites are firm and yolks that are soft are ________________.
7. Eggs that are cooked until both the whites and yolks are firm but not rubbery are ________________.
8. Eggs cooked in hot fat in a skillet to which a teaspoon of water is added to the pan and the pan is covered for a few seconds are ________________.
9. For baked eggs, the oven temperature should be ________________ °F.
10. Shelled eggs cooked in a small amount of water below the boiling point are ________________.
11. When cooking eggs in water, the whites can be hardened by adding a small amount of salt or ________________ to the water.
12. The dish of poached eggs served on a toasted English muffin with a slice of Canadian bacon and topped with Hollandaise sauce is ________________.
13. Eggs placed into a lightly greased cup, muffin tin, or ramekin and cooked in the oven at a moderate temperature for 15-20 minutes are ________________.
14. The dish of eggs baked in a cheese sauce and sprinkled with grated cheese is ________________.
15. In making scrambled eggs, a small amount of water, milk, or cream is added to the blended egg to ensure ________________.
16. High heat and overcooking causes scrambled eggs to "weep" or become ________________.
17. Eggs can be scrambled on the griddle in a sauté pan, a double-boiler or bain-marie, in a shallow baking pan in the oven, or in a ________________.
18. A plain omelet cooked on top of the range is also called a classic or ________________ omelet.
19. An omelet started on top of the range and finished in the oven is a(an) ________________ omelet.
20. A filling of jelly, chopped meat, poultry, seafood, cheese, vegetables, or chopped herbs should be added just before ________________ the omelet.

## Activity 27-7 • Matching

**Directions**

Match each variety of cheese with the best description by writing the letter of the variety in the blank to the left of the description. Each letter may be used more than once.

**Variety of Cheeses**

A. imitation
B. natural
C. pasteurized processed
D. processed

**Descriptions**

_____ 1. Made from one or more ground natural cheeses mixed with nonfat dry milk solids and water.

_____ 2. Made from milk protein and vegetable oils.

_____ 3. Made from a combination of ground cheeses.

_____ 4. Made from milk combined with a starter.

_____ 5. Stablizers are added to preserve the texture of the food.

_____ 6. Types include cold pack cheese.

_____ 7. Classifications include hard; semi-hard; semi-soft; and soft.

_____ 8. Contain only about 10 percent of the cholesterol of other cheeses.

_____ 9. Not actually a cheese as the product contains only about 10 percent butterfat.

_____ 10. An emulsifying agent is added to make the cheese melt and blend more easily.

# Activity 27-8 • Matching

## Directions

Match each classification of natural cheese to the type of natural cheese by writing the letter of the classification in the blank to the left of the type of cheese. Each letter may be used more than once.

### Types of Natural Cheese

_____ 1. Swiss

_____ 2. Mozzarella

_____ 3. Cottage

_____ 4. Parmesan

_____ 5. Cheddar

_____ 6. Ricotta

_____ 7. Monterey Jack

_____ 8. Romano

_____ 9. Bleu

_____ 10. Provolone

### Classification of Natural Cheeses

A. hard
B. semihard
C. semisoft
D. soft

## *Activity 27-9 • True/False*

Directions

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F** to the left of the statement. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Cheese is a milk product made from the milk of cows, sheep, or goats.

T F 2. A starter is a combination of sterilized milk and rennet.

T F 3. A starter causes the milk to separate into solids and liquids.

T F 4. The bacteria or molds in the starter produce the special flavor of the cheese.

T F 5. Cheese is made from milk solids or curds.

T F 6. Cottage cheese is ripened to develop its flavor.

T F 7. Foodservice operations prefer to use natural cheese for cooking.

T F 8. Select cheeses according to their intended use.

T F 9. Quality standards for cheddar and swiss cheeses were developed by the Food and Drug Administration.

T F 10. Federal inspections ensure that cheese products are Grade AA.

# Activity 27-10 • Short Answer

**Directions**

**Respond** to the following statements using the spaces provided.

1. Explain this sentence: In cooking, cheese should be meltable, blendable, and have a definite cheese flavor.

2. List three varieties of cheeses.
(A)
(B)
(C)

3. Name the four characteristics used by the USDA for grading cheeses.
(A)
(B)
(C)
(D)

4. Provide an example of a food product in which cheese is used as a (an):
- Appetizer:
- Dessert:
- Garnish:
- Main dish:
- Topping:

5. Describe the procedure for preparing cheese for an uncooked food product.

6. List two procedures for preparing cheese for a cooked food product.
(A)
(B)

7. Describe the effects that high temperatures and overcooking have on cheese.

8. Describe the procedure for storing cheeses.

9. List two types of cheeses that should be used before the expiration date marked on the package.
(A) (B)

# Chapter 28

# Vegetables and Fruits

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 28:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

## Introduction

A variety of vegetables and fruits are served in foodservice establishments. Modern methods of processing, transportation, and storage make vegetables and fruits available in fresh, frozen, canned, dried, and dehydrated forms throughout the year. Vegetables and fruits are used in meal preparation, not only for their nutritional importance, but for the variety, flavor, and eye appeal they bring to the menu.

## Activity 28-1 • Short Answer

### Directions

(A) To review the different kinds of fruits, complete the following exercise by giving three examples of each type of fruit listed. Use the blanks provided for your answers.

1. Pomes: ________ ________ ________
2. Drupes: ________ ________ ________
3. Citrus Fruits: ________ ________ ________
4. Tropical Fruits: ________ ________ ________

(B) To review the different kinds of vegetables, complete the following exercises by giving one example of each of the classifications. Use the blanks provided for your answers.

### Parts of the Plant

Root: ________

Bulb: ________

Stem: ________

Leaf: ________

Flower: ________

Pod/seed: ________

Fruit: ________

### Colors

White: ________

Yellow: ________

Green: ________

Red: ________

### Flavors

Strong: ________

Mild: ________

### Moisture Contents

High: ________

Dry: ________

## Activity 28-2 • Short Answer

### Directions

List the four forms in which vegetables and fruits may be purchased. Use the blanks below to record your answers.

1. ______________________ 3. ______________________

2. ______________________ 4. ______________________

## Activity 28-3 • Matching

### Directions

Match the term from the right column with the best description in the left column. Place the letter of the term in the blank to the left of the numbered description. Each letter will be used only once.

### Descriptions

_____ 1. Fresh vegetables and fruits from which most of the water has been evaporated.

_____ 2. The process of applying steam to seal the outside of the vegetable before freezing.

_____ 3. Fruits and vegetables that are available only at certain times of the year.

_____ 4. Number 1 is the best of these.

_____ 5. A large, heavy cardboard box in which fruits or vegetables are placed either wrapped or unwrapped.

_____ 6. A large, oblong box used to pack solid, fresh fruits.

_____ 7. A carton holding 12 baskets of fresh fruits and vegetables such as cherry tomatoes and berries.

_____ 8. A shallow cardboard or wooden box used for packing easily bruised fruits and vegetables.

_____ 9. Potatoes, onions, and cooking apples are packed in these.

_____ 10. Vegetables purchased in small units like parsley and watercress.

### Terms

A. blanching
B. bunches
C. carton
D. crate
E. dehydrated
F. flat
G. fresh
H. grade
I. lug
J. sacks

# Activity 28-4 • Short Answer

## Directions

Read the following items related to menu uses, preparation procedures, and cooking principles for fruits and vegetables. Use the spaces provided to record your answers.

1. (A) Describe three menu uses for fruits:

   1. ____________________
   2. ____________________
   3. ____________________

   (B) Describe three main uses for vegetables:

   1. ____________________
   2. ____________________
   3. ____________________

2. Explain why the skin or peel of vegetables and fruits should be pared or scraped very thinly.

   ________________________________________

   ________________________________________

3. Describe the procedure for crisping leafy and stemmed vegetables.

   ________________________________________

   ________________________________________

   ________________________________________

4. In the blanks provided, name and describe four procedures that can be used to cut fruits and vegetables.

| Name of Procedure | Description |
|---|---|
| ● ____________________ | ● ____________________ |
| ● ____________________ | ● ____________________ |
| ● ____________________ | ● ____________________ |
| ● ____________________ | ● ____________________ |

5. Explain how discoloration can be prevented in cut fruits that have low acid content.

   ________________________________________

   ________________________________________

6. Describe three cooking principles that should be observed when cooking fruits and vegetables.

   (A) ____________________________________

   (B) ____________________________________

   (C) ____________________________________

## *Activity 28-5 • True/False*

**Directions**

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Boiling is the most popular method for cooking fresh vegetables.

________________________________________________

T F 2. When boiling, add the vegetables or fruits just before the salted water or liquid begins to boil.

________________________________________________

T F 3. Steaming is an excellent method for cooking vegetables because it is fast, it retains nutrients, and it preserves color.

________________________________________________

T F 4. The pressure steamer is primarily used to cook delicate, quick-cooking vegetables.

________________________________________________

T F 5. Fresh potatoes should be soaked in water before deep fat frying.

________________________________________________

T F 6. Sautéing may be used as a preliminary step in preparation.

________________________________________________

T F 7. In stir-frying, vegetables are cooked very slowly and then seasoned with soy sauce.

________________________________________________

T F 8. Baking in their skins is a popular method for cooking solid, low-moisture vegetables.

________________________________________________

T F 9. Cooking a quantity of vegetables in a steam-jacketed kettle is slower than boiling.

________________________________________________

T F 10. To cook vegetables in a microwave oven, cut the vegetables evenly into large pieces and place in a square, aluminum pan.

________________________________________________

## Activity 28-6 • Identifying

**Directions**

In the vegetable garnishes column, put a "√" in the blank to the left of each item that you think could be an appropriate garnish for vegetables. In the fruit garnishes column, put a "√" in the blank to the left of each item that you think could be an appropriate garnish for fruits.

**Vegetable Garnishes**

_____ almonds

_____ sour cream

_____ cookie crumbs

_____ spices

_____ mint sprig

_____ herbs

_____ maraschino cherries

_____ pearl onions

_____ buttered bread crumbs

_____ shaved chocolate

**Fruit Garnishes**

_____ whipped cream

_____ pearl onions

_____ buttered bread crumbs

_____ shaved chocolate

_____ ice cream

_____ chopped nuts

_____ mushrooms

_____ mint sprig

_____ cookie crumbs

_____ herbs

## Activity 28-7 • Identifying

**Directions**

Put a "√" in the blank to the left of each vegetable combination that you think would be attractive and colorful served together.

_____ green beans and mushrooms

_____ carrots and celery

_____ cauliflower and pearl onions

_____ potatoes and green beans

_____ peas and green beans

## Activity 28-8 • Sentence Completion

**Directions**

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. Fresh vegetables used as appetizers or garnishes or in salads may be prepared in advance and stored in the ______________________.

2. Cooked vegetables should be prepared in small quantities and served______________________.

3. Leftover vegetables should be refrigerated and used in soups or ______________________.

4. Leftover vegetable juices and cooking liquid should be used as the liquid in soups and ____________ ______________________.

5. Fresh fruits that darken after cutting should be treated with ascorbic acid or ________________ to keep them bright.

6. Frozen fruits should be thawed, unopened, in the ____________________ and used quickly.

7. After opening, canned fruits and juices become____________________ and spoil quickly.

8. Unused portions of canned fruits and juices may be refrigerated for up to ____________ days.

9. Use frozen juices within ____________________ days after opening and preparing.

10. In dried form, fruits keep for about________________________months.

# Chapter 29

## Cereals and Pastas

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 29:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

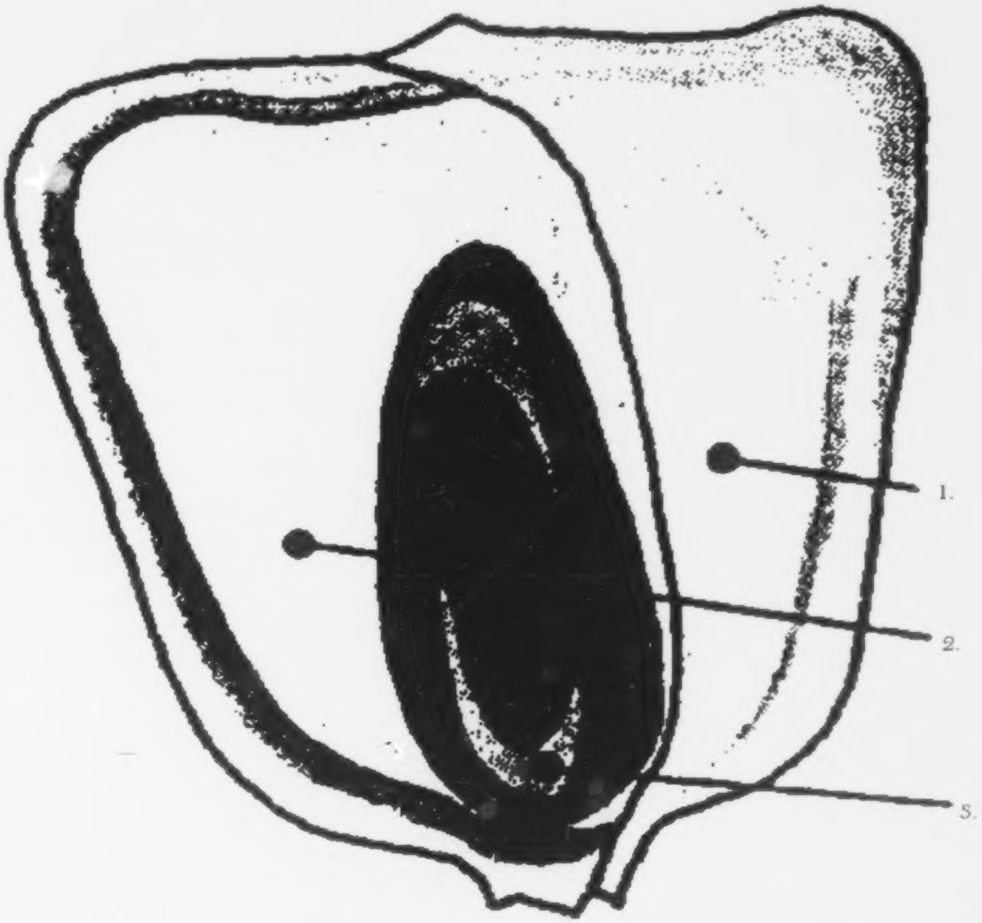
### Introduction

Cereals and pastas are made from grains. Grains are the edible seeds produced by certain plants of the grass family. The principle grains are wheat, rice, oats, barley, rye, corn, and buckwheat (or Kasha which is popular in Jewish cooking). These grains also are referred to as cereal grains or cereals. Breakfast cereals, pastas (macaroni products), and flour are all made from cereal grains. Grains and grain products are inexpensive sources of energy for the body. They are easy to store and have a long shelf life.

## Activity 29-1 • Labeling

**Directions**

**For the corn kernel illustrated below, (A) label the kernel part and (B) provide the nutritional quality of the part. Use the blanks provided at the bottom of the page to record your answers.**



1. (A) ______________________________

   (B) ______________________________

2. (A) ______________________________

   (B) ______________________________

3. (A) ______________________________

   (B) ______________________________

# Activity 29-2 • Sentence Completion

**Directions**

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. Edible seeds produced by certain plants of the grass family are ________________ .
2. Wheat, rice, oats, barley, rye, corn, and buckwheat are referred to as cereal grains or ______________ .
3. Cereal grains are used to make breakfast cereals, flour, and __________________________ .
4. The outside covering of the grain that supplies fiber and vitamins is the ______________________ .
5. The white, inner portion of the kernel that is mostly carbohydrate is the ______________________ .
6. A rich source of vitamins, protein, and fat that is found at one end of the kernel is the ________________ .
7. The grain products where all three parts of the kernel are kept together are termed whole-grain or ________________ .
8. Refined grain products contain the ____________________ of the grain.
9. To restore the vitamins and minerals lost in the refining process, many grain products are restored or ________________ .
10. When more nutrients are added to the grain product than were removed during processing, the product is said to be __________________________ .
11. Cereal products are usually purchased by ______________________ rather than by packaging size.
12. Rice that has had only the hull removed during processing is __________________________ rice.
13. Rice that is polished until only the endosperm is left is polished rice or ____________________ rice.
14. Rice that has been treated to retain the nutrients present in the original grain is ____________________ rice.
15. Rice that has been treated with glucose and talc to make the rice look more polished and improve its keeping qualities is ______________________ rice.
16. The seed of a wild grass that is blended with long-grain rice is known as ________________ rice.
17. The best pastas are made from wheat containing a very high proportion of gluten. This type of wheat is ______________________ .

## Activity 29-2 (continued) • Sentence Completion

18. Noodles are different from other pastas because they contain ________________.

19. Convenience breakfast cereals that go directly into the cereal bowl, requiring only the addition of boiling water or milk are ____________________ cereals.

20. Precooked rice and pastas are not popular in foodservice establishments because they lose ______________________ if kept warm for long periods.

## Activity 29-3 • Short Answer

**Directions**

In the chart below, describe the menu uses of each grain product listed in the left-hand column.

| Grain Product | Menu Uses |
|---|---|
| Breakfast Cereals | (A) |
| Rice | (B) |
| Pastas | (C) |

## Activity 29-4 • Short Answer

**Directions**

Respond to the following questions regarding the procedures for cooking grain products. Record your answers on the blanks provided.

1. What three things occur as starches cook?
   (A) ______________________________
   (B) ______________________________
   (C) ______________________________

2. What occurs when excess water is used to cook grain products?
   ______________________________
   ______________________________

3. What occurs when cereals and pastas are overcooked?
   ______________________________
   ______________________________

4. What does *al dente* mean? ______________________________
   To what products does use of this term apply?______________________________
   ______________________________

5. Why should excessive stirring be avoided when cooking grain products?
   ______________________________
   ______________________________

6. What is one method that can be used to keep rice from sticking together as it cooks?
   ______________________________
   ______________________________

7. How should spaghetti be held if it is not served immediately?
   ______________________________
   ______________________________

## Activity 29-5 • Short Answer

**Directions**

**Assume** that you are employed in a foodservice establishment and are responsible for serving the food products listed below. In the blanks beside each product, give a detailed account of how you would garnish and serve that particular product.

1. Cold breakfast cereal

2. Hot breakfast cereal

3. Spaghetti

753

# Chapter 30

## Breads

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 30:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Introduction

Fresh, hot bread is often the featured menu item that draws people back to a foodservice establishment. The bread may be prepared in the kitchen from scratch or from a mix, or it may be purchased from a bakery. If the products are high in quality and served hot and fresh, the effect is the same– repeat customers.

## Activity 30-1 • Multiple Choice

**Directions**

**Test your knowledge of the various types of breads by completing the following activity. Place the letter of the best answer in the blank to the left of each item below.**

_____ 1. Quick breads include _______________.

A. biscuits, doughnuts, and popovers
B. coffee cakes, Danish pastries, and doughnuts
C. cornbread, muffins, and waffles
D. doughnuts, pancakes, and sweet rolls

_____ 2. Sweetened yeast breads include _______________.

A. biscuits, doughnuts, and popovers
B. sweetrolls, Danish pastries, and doughnuts
C. cornbread, muffins, and waffles
D. doughnuts, pancakes, and sweet rolls

_____ 3. Pour batters are used to make _______________.

A. biscuits
B. doughnuts
C. muffins
D. popovers

_____ 4. Muffins are made from _______________.

A. drop batters
B. hard doughs
C. pour batters
D. soft doughs

_____ 5. The usual proportion of flour to liquid in soft doughs is _______________.

A. 1:1
B. 2:1
C. 3:1
D. 4:1

## Activity 30-2 • Multiple Choice

### Directions

For each item listed below select the best answer from the choices provided beneath each sentence. Place the letter of the response in the blank that is to the left of the numbered item.

_____ 1. Substance that makes a baked product rise so it is light in proportion to its size.
A. flour
B. leavener
C. liquid
D. salt

_____ 2. Ingredient made from finely ground grain; it contains protein to form the structure or body of the bread.
A. flour
B. salt
C. sugar
D. yeast

_____ 3. Substance that reacts with acid to produce carbon dioxide.
A. baking powder
B. baking soda
C. cream of tartar
D. yeast

_____ 4. Leavener that expands when heated; it can be incorporated into a product by beating it.
A. air
B. baking powder
C. eggs
D. yeast

_____ 5. Ingredient that strengthens gluten and improves the texture, color, and keeping quality of bread.
A. baking powder
B. baking soda
C. fat
D. salt

_____ 6. A liquid used in making bread; it makes the texture of the bread coarse and chewy.
A. fat
B. gluten
C. milk
D. water

## Activity 30-2 (continued) • Multiple Choice

_____ 7. The leavener used for making popovers.
A. air
B. baking powder
C. chemical leaveners
D. steam

_____ 8. Leavener that may be purchased in fresh or dry form.
A. fat
B. flavorings
C. flour
D. yeast

_____ 9. Ingredient that contributes flavor, tenderness, and richness to breads; it helps the product brown and adds to its keeping quality.
A. eggs
B. fat
C. milk
D. water

_____ 10. Extracts, spices, and herbs that add aroma and color to breads.
A. flavorings
B. flour
C. gluten
D. yeast

_____ 11. Ingredient that aids in leavening and binds all the ingredients together.
A. eggs
B. fat
C. milk
D. water

_____ 12. Ingredient that speeds the action of yeast and helps baked products stay fresh longer.
A. baking powder
B. baking soda
C. flour
D. sugar

_____ 13. A liquid used in making bread; it adds flavor and nutrients and improves the color and texture of bread.
A. fat
B. gluten
C. milk
D. water

_____ 14. Substance formed from the protein in flour; the elastic framework that stretches and holds the gas bubbles formed by the leavening as the batter or dough rises.
- A. fermentation
- B. gluten
- C. leavener
- D. steam

_____ 15. Chemicals that react with moisture and heat to form the gas, carbon dioxide. They are used in quick breads.
- A. fat
- B. leaveners
- C. salt
- D. sugar

_____ 16. An ingredient that may be used as an acid to produce carbon dioxide.
- A. baking powder
- B. baking soda
- C. cream of tartar
- D. gluten

_____ 17. Substances that provide moisture to develop the gluten.
- A. eggs
- B. fats
- C. flavorings
- D. liquids

_____ 18. Substances used to add texture and flavor to some breads, but do not have enough gluten to develop a desirable bread structure.
- A. flavorings
- B. meals
- C. rye flour
- D. whole wheat flour

_____ 19. The best flour for making breads.
- A. cake flour
- B. self-rising
- C. white wheat
- D. wheat

_____ 20. A chemical leavener consisting of a baking soda, an acid salt, and a starch; the most common leavening agent for quick breads.
- A. baking powder
- B. cream of tartar
- C. flavorings
- D. gluten

## Activity 30-3 • Short Answer

**Directions**

In the spaces provided, list three breads or bread products that are popular for each of the following.

Breakfast:
1. ______________________
2. ______________________
3. ______________________

Lunch or Dinner:
1. ______________________
2. ______________________
3. ______________________

Dessert:
1. ______________________
2. ______________________
3. ______________________

## Activity 30-4 • Sentence Completion

**Directions**

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. Most foodservice establishments purchase some or all of their breads from ______________.
2. When placed on the table, breads and rolls should be covered with a napkin to retain the ______________.
3. To store cooled bread, wrap it or place it in an airtight moisture-proof container to keep it from becoming ______________.
4. In warm weather, bread may be stored in the refrigerator to retard the growth of ______________.
5. For future use, place breads in a moisture-proof wrapper and ______________. This type of storage will keep breads fresh for several months.

## Activity 30-5 • Short Answer

**Directions**

**To review** the procedures for bread preparation, baking, and serving, respond to the following items. Write your answers on the blanks provided.

1. List three desirable characteristics for each of the following quick breads.

- Muffins
  a. ______________________
  b. ______________________
  c. ______________________
- Waffles/ pancakes
  a. ______________________
  b. ______________________
  c. ______________________
- Popovers
  a. ______________________
  b. ______________________
  c. ______________________
- Biscuits
  a. ______________________
  b. ______________________
  c. ______________________

2. Summarize the steps involved in each of the following methods for mixing quick breads.

Muffin: ______________________________________________

______________________________________________

Biscuit: ______________________________________________

______________________________________________

Cake: ______________________________________________

______________________________________________

3. Name the method of mixing that should be used for each of the following quick breads.

Popovers: ______________________ Biscuits: ______________________
Coffeecake: ______________________ Nut loaves: ______________________
Pancakes: ______________________

4. List the ten basic steps involved in making yeast bread.

a. ______________________________________________
b. ______________________________________________
c. ______________________________________________
d. ______________________________________________
e. ______________________________________________
f. ______________________________________________
g. ______________________________________________
h. ______________________________________________
i. ______________________________________________
j. ______________________________________________

## Activity 30-5 (continued) • Short Answer

5. Describe the desirable characteristics of yeast breads for each category below.
   Appearance: ____________________
   Crust: ____________________

6. Explain the basic differences in the following methods of making yeast breads.
   Straight-dough: ____________________
   Sponge-dough: ____________________
   Batter: ____________________

7. Summarize the procedures for shaping each of the following yeast products.
   Plain loaf: ____________________
   Braided loaf: ____________________
   Plain rolls: ____________________
   Cinnamon rolls: ____________________
   Danish pastries: ____________________
   Cloverleaf rolls: ____________________
   Knots: ____________________
   Butterflake fans: ____________________
   Doughnuts: ____________________

8. List three ways in which sweet yeast breads are prepared differently than other yeast breads.
   (A) ____________________
   (B) ____________________
   (C) ____________________

9. Summarize the procedures used when proofing is done in a proofing cabinet.
   ____________________

10. Explain the term *oven spring.*
    ____________________

11. Provide one reason that glaze is used on sweet yeast breads.
    ____________________

# Chapter 31

## Desserts and Cookies

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 31:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Introduction

Desserts add a finishing touch to a meal. The sweetness they provide make a meal more satisfying. Memorable desserts are often the key to repeat customers.

## *Activity 31-1 • Matching*

### Directions

For each of the following four dessert categories, match the dessert with the best description. Place the letter of the dessert in the blank to the left of the description. Each letter may be used more than once.

### Descriptions

______ 1. Folded square of pastry filled with sweetened fruit.

______ 2. Baked square of pie or biscuit dough filled with sweetened fruit.

______ 3. A fruit filling topped with sweetened biscuit or pie dough and baked.

______ 4. Sweetened fresh fruit spread on top of or between layers of sweet biscuits, angel food cake, or sponge cake.

______ 5. A fruit filling topped with a mixture of flour, nuts, sugar, and shortening and then baked in the oven.

**Fruit Desserts**

A. cobbler
B. crisp
C. dumpling
D. fruit compote
E. fruit turnover
F. shortcake

### Descriptions

______ 6. A chilled dessert made light and fluffy by adding whipped cream or beaten egg whites.

______ 7. The preparation for this dessert requires folding whipped cream into a partially set custard base.

______ 8. A dessert that is beaten to the consistency of whipped cream and then chilled until set.

______ 9. A dessert to which beaten egg whites are added.

______ 10. A smooth, velvety dessert that uses a hot pudding or soft custard as the liquid for dissolving the gelatin.

**Gelatin Desserts**

A. Bavarian cream
B. gelatin cream
C. gelatin whip
D. mousse
E. sponge

## *Activity 31-1 (continued) • Matching*

### Descriptions

_____ 11. A dessert thickened with eggs.

_____ 12. A dessert simmered over hot water or stirred constantly over low heat.

_____ 13. A light puffy dessert leavened by beaten egg whites.

_____ 14. A desserts made by pouring soft custard over cake spread with jam.

_____ 15. A dessert thickened with starch.

### Milk Desserts

A. baked soufflé
B. custard
C. floating island
D. pudding
E. soft custard
F. trifle

### Descriptions

_____ 16. A dessert made with sweetened fruit juices and milk.

_____ 17. A very rich, frozen dessert made with sweetened whipped cream and flavoring.

_____ 18. A dessert that is made from sweetened fruit juices and that does not contain milk products.

_____ 19. A rich dessert made by pouring a sugar syrup like butterscotch or raspberry syrup over beaten egg yolks or egg whites.

_____ 20. A brick of ice cream encased in a sponge cake and iced with a soft meringue sprinkled with slivered almonds.

### Frozen Desserts

A. baked Alaska
B. ice cream
C. ices
D. frozen mousse
E. parfait
F. sherbet

## *Activity 31-2 • Short Answer*

**Directions**

From the list below, choose garnishes or accompaniments that would be appropriately served with each dessert in items 1 - 5. There will be more than one correct answer for each dessert item.

**Garnishes and Accompaniments**

caramel sauce
chocolate shavings
chopped nuts
crushed pineapple
dessert sauce
fresh fruit
fruit sauce
fruit topping
whipped cream
hard sauce
ice cream
meringue
soft custard

1. Custards ____________________
2. Fruit desserts ____________________
3. Fruit gelatins ____________________
4. Gelatin soufflés ____________________
5. Puddings ____________________

## *Activity 31-3 • Short Answer*

**Directions**

**Respond** to the following items using the spaces provided.

1. Explain why gelatin desserts are usually prepared the night before they are to be served.

____________________

____________________

2. Give one reason why gelatin desserts need to be covered while in the refrigerator.

____________________

____________________

3. Describe the correct storing method for puddings and custards containing eggs.

____________________

4. Identify the bacteria that will grow in milk and egg mixtures if they are not handled properly.

____________________

5. Identify at what temperature ice cream should be kept when it is needed for immediate service.

____________________ °F.

## Activity 31-4 • Short Answer

**Directions**

For each type of cookie in the chart below, name the kind of dough required and summarize how the cookie is formed.

| Types of Cookies | Kinds of Dough | How the Cookies are Formed |
|---|---|---|
| 1. Bar | | |
| 2. Drop | | |
| 3. Pressed | | |
| 4. Refrigerator | | |
| 5. Rolled | | |

# Activity 31-5 • Sentence Completion

**Directions**

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. To cool, place freshly baked cookies on a(n) ______________________.

2. The method of preparing cookie dough where the fat and sugar are blended together is the ______________________ method.

3. Stiff dough is easier to handle when chilled because the chilling process hardens the ____________.

4. Before sprinkling rolled cookies with chopped nuts, colored sugars, or candies, they may be spread with a(n) ______________________.

5. Drop cookies are placed approximately ______________ inches apart on a greased baking sheet.

6. For sizing drop cookies, a No. 30 scoop makes a(n) ______________________ cookie.

7. For sizing drop cookies, a No. 100 scoop makes a(n) ______________ cookie.

8. Chewy cookies are produced by adding more ______________.

9. For soft cookies, add moisture by using molasses or ______________________.

10. Crisp cookies have a high ratio of sugar to ______________________.

## Activity 31-6 • True/False

**Directions**

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Cookies are popular finger foods for receptions, teas, or parties.

T F 2. It is considered inappropriate to serve cookies for special occasions.

T F 3. Most foodservice establishments prepare their cookies from scratch.

T F 4. Most cookies should be served cold.

T F 5. As an accompaniment, cookies should be served on small, doily-lined plates.

# Chapter 32

## Cakes, Fillings, Frostings, and Icings

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 32:

7G Use appropriate terminology related to the food production and service industry.

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food production according to industry standards.

### Introduction

Cakes are moist, tender, sweet, baked desserts. They are among the most popular desserts on foodservice menus. Many different kinds of cakes are possible by varying the basic ingredients. Different flavorings are added for variety. Cakes are baked in different shapes: round, square, rectangle, or tube. Cakes consist of one layer or several layers. They can be dusted with powdered sugar, covered with a sauce, filled, or frosted. A variety of icings and frostings in different colors and flavors are used in foodservice. Iced and frosted cakes can also be decorated with candies, nuts, coconut, or fruit.

Cakes are a traditional favorite for desserts, snacks, and special occasions like birthdays and weddings. Some cakes, such as jam cakes and fruit cakes are associated with holidays like Christmas.

## *Activity 32-1 • Short Answer*

### Directions

To review the types of cakes and menu uses of cakes, respond to the following items. Write your answers on the blanks provided.

1. In terms of the ingredients used, identify two differences between shortened cakes and foam cakes.
______________________________________________

2. Name and describe three types of foam cakes.
Type 1: ____________________ Description: ____________________
Type 2: ____________________ Description: ____________________
Type 3: ____________________ Description: ____________________

3. Identify two menu uses of cakes.
(A) ______________________________________________
(B) ______________________________________________

## *Activity 32-2 • Sentence Completion*

### Directions

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. Compared to all-purpose flour, cake flour is made from soft wheat and has a(n) ______________ gluten content.
2. Too much flour results in a tough cake that ______________ during baking.
3. Compared to regular granulated sugar, a fine sugar produces a cake with more ______________.
4. A sweet, tender, finely grained cake can be produced by using a ______________ shortening.
5. Too much shortening weakens the gluten structure causing the cake to ______________.
6. In sponge cakes, eggs provide the ______________.
7. A dark crust may be caused by using too much ______________.
8. To develop the gluten, the liquid provides the needed ______________.
9. Too much liquid results in a heavy, ______________ cake.
10. Too little liquid causes the cake to be ______________.
11. For cakes to rise and become light and porous, a ______________ is necessary.
12. Instead of shortening, chiffon cakes are made with ______________.
13. All ingredients for cakes should be at this temperature for mixing: ______________.
14. Eggs provide the leavening in ______________ cakes.
15. The type of liquid used in cakes is usually ______________.
16. Too little leavener results in a ______________, dense cake.
17. Standardized recipes are sometimes called ______________.
18. Even small variations in the ingredients can affect the ______________ of the cake.
19. The type of flour to use in baking cakes is usually specified in the ______________.
20. To prevent sponge cakes from becoming tough, the flour is made weaker by the addition of ______________.

# Activity 32-3 • Case Studies

## Directions

Respond to the following case studies by writing your answers in the spaces provided.

## Case Study #1

**Pablo is a foodservice** employee with the responsibility of preparing shortened cakes. He does not know which method of mixing to use. Please give Pablo some assistance by naming the two methods that can be used for mixing shortened cakes, and by describing the steps in the procedure.

| Methods | Steps in the Procedure |
|---|---|
| (A) | |
| (B) | |

## Case Study #2

**Shim is responsible** for preparing the foam cakes in her foodservice establishment. She needs to make an angel food cake, a sponge cake, and a chiffon cake. Shim does not know which method to use for mixing her foam cakes. Please help her by describing the steps involved in each preferred mixing procedure for the foam cakes listed below.

| Foam Cakes | Steps in Mixing Procedure |
|---|---|
| (A) Angel Food | |
| (B) Sponge | |
| (C) Chiffon | |

## *Activity 32-3 (continued)* • *Case Studies*

### Case Study #3

Now that **Pablo** and Shim have mixed their cakes, they are both anxious to bake them. However, they must first prepare the pans and fill them with the cake batter. The guidelines for choosing appropriate pans, preparing them, and filling them vary for shortened cakes and foam cakes. Therefore, Pablo and Shim will not be able to follow the same guidelines. Please assist them by reminding Pablo of the panning procedures for shortened cakes and by reminding Shim of the panning procedures for foam cakes.

| | Shortened Cakes | Foam Cakes |
|---|---|---|
| Panning: | 1. | 1. |
| Preparing the pans: | 2. | 2. |
| Filling the pans: | 3. | 3. |

### Case Study #4

Since all of Pablo's cakes are shortened cakes, he is going to bake them together in the oven. He needs your advice as to how to arrange the pans inside the conventional oven. NOTE: He will be baking three round cakes in an oven with two racks.

## Case Study #5

Shim's cakes are almost finished baking, but she is worried that she will not be able to tell if they are done. Please describe four ways in which Shim can test her cakes for doneness.

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

## Case Study #6

Pablo and Shim's final steps include removing the cakes from their pans and storing the cakes. Please help them with these final steps by explaining the procedures for removing both shortened cakes and foam cakes from their pans and the procedure for storing both. NOTE: These cakes will not be frosted immediately.

| | Shortened Cakes | Foam Cakes |
|---|---|---|
| Removing from pans: | 1. | 1. |
| Storing: | 2. | 2. |

## *Activity 32-4 • Matching*

### Directions

Match the types of frostings and icings with the best description. Place the letter of the frosting or icing in the blank to the left of the description. Each letter may be used once or not at all.

### Descriptions

______ 1. A smooth and stiff mixture made with egg whites, shortening, and powdered sugar.

______ 2. A thin, sweet syrup or sauce used as a coating.

______ 3. Thin, pourable mixtures of powdered sugar, liquid, and flavoring.

______ 4. Involves dissolving large amounts of sugar in hot liquid and cooking the syrup to a specified temperature or stage.

______ 5. A pure white icing made from a sugar-water mixture boiled with cream of tartar.

### Types of Frostings and Icings

A. Boiled frosting
B. Cooked icings
C. Decorator's frosting
D. Fondant
E. Glaze
F. Uncooked icings

## *Activity 32-5 • Short Answer*

### Directions

In the space provided, describe the procedure for frosting each of the following types of cakes.

1. Sheet Cakes: ______

2. Cupcakes: ______

3. Layer Cakes: ______

4. Tube Cakes: ______

5. Loaf Cakes: ______

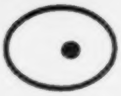
## Activity 32-6 • Matching

### Directions

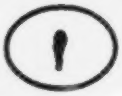
Match the cake decorating design with the best decorating tube. Place the letter of the cake decorating design in the blank to the left of the decorating tube. Each letter may be used once or not at all.

### Decorating Tubes

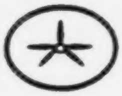
______ 1.



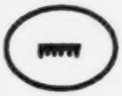
______ 2.



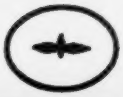
______ 3.



______ 4.



______ 5.



### Cake Decorating Designs

A. basket weave
B. drop flower
C. leaf
D. petal or rose
E. plain or round
F. star

## Activity 32-7 • Short Answer

### Directions

To review the procedures related to cake decorating techniques, cutting, and serving, respond to the following items. Write your answers in the blanks provided.

1. Name and describe two types of paste used for molding and modeling cake decorations.
   (A) Type 1: ________________ Description: ______________________________
   (B) Type 2: ________________ Description: ______________________________

2. List the steps that should be followed when using each of the pastes identified in item #1.
   (A) Type one: ________________ Steps:
   1. ______________________________
   2. ______________________________
   3. ______________________________
   4. ______________________________
   5. ______________________________

## *Activity 32-7 (continued)* • *Short Answer*

(B) Type 2: ____________ Steps:

1. ____________
2. ____________
3. ____________
4. ____________
5. ____________

3. Define the term *run-out work.* ____________

____________

4. List the four types of lettering used in icing cakes.

(A) ____________ (C) ____________

(B) ____________ (D) ____________

5. Describe the appropriate consistency of icing used for lettering. ____________

____________

6. When cutting and serving cakes, what factors determine the shape of the servings? ____________

____________

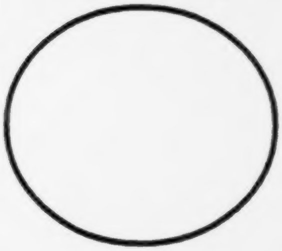
What factors determine the size of the servings? ____________

____________

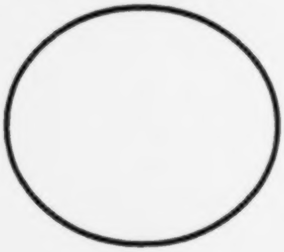
7. Using the illustrations below, draw lines to demonstrate the proper cutting techniques for each type and size of cake.

(A) Rectangular sheet cake
approx. 2x3 inches
cut for 64 servings

(B) Rectangular sheet cake
approx. 3x5 inches
cut for 48 servings



(C) Round cake
approx. 9-inches, 2 layer
14-16 servings



(D) Round cake
approx. 12-inches, 2 layer
26 servings

# Chapter 33

## Pastries and Pies

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 33:

7G Use appropriate terminology related to the food production and service industry

9E Utilize appropriate techniques for preparation and presentation in food production operations according to industry standards.

9J Perform appropriate tasks in food preparation according to industry standards.

### Introduction

The term pastry is used to refer to a large variety of baked products made from doughs rich in fat. Pastries often have fillings and toppings, but they get their name from the crust, or pastry, used to make them. Pastries include cream puffs, puff pastry, tarts, and turnovers, as well as the many varieties of pies.

## Activity 33-1 • Sentence Completion

**Directions**

For each item below, write the word(s) in the blank provided that best completes the sentence.

1. An egg pie made in a single crust bottom is called ____________________.

2. Pastry shells are used as a base for these types of dishes: ______________________.

3. Deep-fried doughnuts that are lightly dusted with a fine powdered sugar are called ____________ ____________.

4. Oblong, hollow pastries filled with a cream filling and covered with chocolate icing are called ________________.

5. Small, single-serving pies with one or two crusts are called ____________________.

6. Small, usually triangular pastries filled with fruit, jam, or meat are called ____________________.

7. Types of pies that include fillings made with apple, blueberry, peach, and cherry are ___________ pies.

8. Types of pies made with a single crust on top rather than a crust on the bottom are __________ pies.

9. Types of pies made with one thin layer of rolled pie dough are ___________ pies.

10. Baked products made by wrapping dough around a piece of fruit are called ______________.

## Activity 33-2 • Short Answer

**Directions**

**Read** the items listed below and write your responses in the blanks provided.

1. Name the four ingredients found in most pastries.
   (A) ______________________ (C) ______________________
   (B) ______________________ (D) ______________________

2. (A) Explain how pastry flour differs from all-purpose flour. ______________________
   ______________________
   (B) Explain how pastry flour helps to produce a tender pie crust. ______________________
   ______________________

3. (A) Name the type of flour used for making both choux paste and puff paste. ______________________
   ______________________
   (B) Explain why this type flour is used. ______________________
   ______________________

4. (A) Name the type of shortening best used for pastries. ______________________
   ______________________
   (B) Explain how shortening makes pastry tender. ______________________
   ______________________

5. Name two functions of salt in pastry making.
   (A) ______________________ (B) ______________________

6. (A) Explain the role water plays in pastry making. ______________________
   ______________________
   (B) Give one reason as to why cold water should be used in pastry making. ______________________
   ______________________
   (C) Give one example of what happens to the pie crust if too little water is used. ______________________
   ______________________
   (D) Give one example of what happens to the pie crust if too much water is used. ______________________
   ______________________

7. Name two roles of eggs in pastry making.
   (A) ______________________ (B) ______________________

8. Name two functions of sugar in pastry making.
   (A) ______________________ (B) ______________________

779

## Activity 33-3 • Short Answer

**Directions**

Identify the menu uses of pastries by listing at least two examples of pastry products appropriate for each of the following menu items.

| Main Dishes | Appetizers | Desserts |
|---|---|---|
| 1. ________ | 1. ________ | 1. ________ |
| 2. ________ | 2. ________ | 2. ________ |

## Activity 33-4 • Short Answer

**Directions**

Pie crusts can be made from different ingredients. Complete the box below by listing the ingredients found in each type of pie crust.

**Types of Pie Crust**

**Dough**

**Ingredients**

1. ________
2. ________
3. ________
4. ________

**Crumb**

**Ingredients**

1. ________

**OR**

2. ________

**OR**

3. ________

**OR**

4. ________

**MIXED WITH**

5. ________
6. ________

## Activity 33-5 • Short Answer

**Directions**

(A) You are a cooking instructor at the Chatelaine Cooking School. This week the students have prepared pie crusts and pastries. It appears as though some of the students did not use accurate measurements. Complete the student evaluation sheet below by providing the students with possible reasons why some of their pie crusts and pastries are unacceptable. NOTE: There may be more than one correct answer for each situation.

**Student Evaluation Sheet**

| STUDENT | PRODUCT | EVALUATION | POSSIBLE PROBLEM |
|---|---|---|---|
| Angelina | Two-crust pie | Top crust shrinks | |
| Herman | Pastries | Tough pastry | |
| Jaclyn | Two-crust pie | Dough overly tender | |
| Phil | Quiche | Crust dry, crumbly | |
| Yokiko | Turnovers | Crust pale in color | |

(B) Help these students with their concerns about mixing the ingredients for successful pie crusts and pastries. Write your answers in the blanks provided.

1. Anne needs help in making a flaky crust. Provide her with three mixing guidelines.

(A) ______________________________

(B) ______________________________

(C) ______________________________

2. For a pumpkin pie, Chan wants a mealy dough for the bottom crust. Give Chan two mixing guidelines.

(A) ______________________________

(B) ______________________________

## Activity 33-6 • Matching

### Directions

Listed below are steps in handling dough. Using the steps in the right column, match them to the descriptions of the steps in the left column. Place the letter of the steps in the blanks provided to the left of the descriptions. All steps will be used more than once.

### Descriptions of Steps

_____ 1. Do this from the center to the edge.

_____ 2. Place dough in a cool place for several hours.

_____ 3. Do this by hand or machine.

_____ 4. Fold the dough in half.

_____ 5. Doing this makes the dough easier to roll.

_____ 6. Take care not to stretch or tear the dough.

_____ 7. Scale the dough into 6-8 oz. pieces.

_____ 8. Trim the crust slightly larger than the pan.

_____ 9. Do this to soften the gluten.

_____ 10. Shape the dough into a round ball.

### Steps in Handling Dough

A. panning
B. resting
C. rolling

782

# *Activity 33-7 • Short Answer*

**Directions**

The following items relate to panning pie crusts. Read the questions and write your answers in the blanks provided.

1. (A) How are pie crust edges *fluted*? ____________________

   (B) What effect does fluting give the crust edge? ____________________

2. What are two tools that can be used to *crimp* a pie crust edge?

   (A) ____________________ (B) ____________________

3. (A) What does *docking* prevent? ____________________

   (B) What process does docking allow? ____________________

   (C) How is docking done? ____________________

4. (A) What are the five steps in *double-panning* single crusts?

   1. ____________________
   2. ____________________
   3. ____________________
   4. ____________________
   5. ____________________

   (B) What are the five steps in preparing a two-crust pie?

   1. ____________________
   2. ____________________
   3. ____________________
   4. ____________________
   5. ____________________

5. (A) What is one ingredient that can be used for a *wash*? ____________________

   (B) What effect does a wash give the pie crust? ____________________

   (C) Why use a wash on prebaked pie shells? ____________________

## *Activity 33-8 • Scenarios*

### Directions

You are the supervisor of a large food production operation. It is your job to set up the assembly line for pie production. There are two assembly lines. One group has three people making one-crust pies and one group has four people making two-crust pies. In the space below, write the names of each group member and describe her or his duty in the assembly line. Put the duties in the proper sequence.

### Assembly Line #1 - One-Crust Pies

| | |
|---|---|
| Step #1 | Name: ______________________________<br>Duty: ______________________________ |
| Step #2 | Name: ______________________________<br>Duty: ______________________________ |
| Step #3 | Name: ______________________________<br>Duty: ______________________________ |

### Assembly Line #2- Two-Crust Pies

| | |
|---|---|
| Step #1 | Name: ______________________________<br>Duty: ______________________________ |
| Step #2 | Name: ______________________________<br>Duty: ______________________________ |
| Step #3 | Name: ______________________________<br>Duty: ______________________________ |
| Step #4 | Name: ______________________________<br>Duty: ______________________________ |

## *Activity 33-9 • Matching*

### Directions

Match the type of pastry filling with the best description. Place the letter of the type of pastry filling in the blank to the left of the description. Each letter may be used more than once.

### Descriptions

_____ 1. Made with thickened milk and eggs.
_____ 2. Includes apple, apricot, blackberry, cherry, and peach.
_____ 3. Made with ice cream.
_____ 4. These are light and fluffy.
_____ 5. Flavors include lemon, orange, strawberry, and chocolate.
_____ 6. Flavors include banana, butterscotch, chocolate, coconut, and vanilla.
_____ 7. Made with egg whites or whipped cream folded into a cream or fruit filling.
_____ 8. Made of milk and egg mixtures baked in a single pie crust.
_____ 9. Includes pecan and pumpkin.
_____ 10. Usually served frozen.

### Types of Pastry Filling

A. Chiffon
B. Cream
C. Custard
D. Fruit
E. Specialty

## *Activity 33-10 • Short Answer*

### Directions

Exercises (A) and (B) deal with types of pie fillings and the steps in preparing each type. Complete the boxes in Exercise (A) with information about fruit fillings. Complete the boxes in Exercise (B) with information about soft fillings.

### (A) Fruit Fillings

| TYPES OF FRUITS FOR FILLINGS | THREE TYPES OF PREPARATION METHODS |
|---|---|
| 1. fresh fruits | |
| 2. ______________________ | 1. ______________________ |
| 3. ______________________ | 2. ______________________ |
| 4. ______________________ | 3. ______________________ |

## *Activity 33-10 (continued) • Short Answer*

### (B) Soft Fillings

| BASE INGREDIENTS | THREE TYPES OF SOFT FILLINGS |
|---|---|
| 1. ____________________ | |
| 2. ____________________ | 1. ____________________ |
| 3. ____________________ | 2. ____________________ |
| 4. ____________________ | 3. ____________________ |

## *Activity 33-11 • Numbering*

### Directions

The ten steps to preparing meringue toppings are listed below, but are out of sequence. Put the steps in order by placing the corresponding numbers, 1-10, on the blank to the left of the step in the order that the step occurs. As an example, the first step is identified for you.

_____ Add cream of tartar, tapioca, cornstarch or a gum stabilizer if desired.

_____ Add sugar and beat until the sugar is dissolved.

_____ Attach meringue to the edge of the pie crust.

_____ Heap meringue on a cooked pie filling.

_____ Beat eggs until they stand in soft peaks.

_____ Beat egg whites until foamy.

__1__ Bring fresh or frozen egg whites to room temperature.

_____ Bake meringue at 400°F for 10 minutes until lightly browned.

_____ Swirl meringue to form soft peaks.

_____ The meringue should be thick, fluffy, smooth, and glossy.

# Activity 33-12 • True/ False

**Directions**

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Pastries with fillings containing eggs, milk, meat, poultry, or fish must be kept refrigerated.

T F 2. Most pastries taste best when served the day they are made.

T F 3. Rich pastries are usually served with garnishes.

T F 4. Fruit-filled pastries and pies may be topped with a slice of cheddar cheese.

T F 5. Pastries with cream, chiffon, or custard fillings should be served warm.

T F 6. Chiffon and meringue-topped pies are usually served with garnishes.

T F 7. Custard pies are often topped with whipped cream.

T F 8. Fruit pies should be served cold.

T F 9. Deep dish pies may be served with a scoop of ice cream.

T F 10. Keeping pies at room temperature can cause top crusts to become soggy.

# Chapter 34

# Management Responsibilities

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 34:

2C Summarize the goals and mission of various food production and service organizations.

3C Explain management functions in food production and service operation.

3E Analyze styles of supervision.

6A Summarize legislation, government regulations, and public policy affecting the food production and service industry.

6C Interpret laws and policies pertaining to food production and service establishments.

9A Utilize effective planning strategies for food production operations.

11H Implement quality assurance in all aspects of the food production and service industry.

## Introduction

Being a foodservice manager can be an interesting and varied job. A manager of a foodservice operation is involved with many tasks, such as menu design, food purchasing, bookkeeping and payroll, coordination of work schedules, and customer satisfaction.

Foodservice managers must learn as well as supervise every aspect of food preparation and foodservice. They must assume a variety of management level responsibilities and functions, which include planning, leading, staffing, organizing, and controlling. Management is the act of directing and controlling the work of others.

## Activity 34-1 • Evaluation

**Directions**

Complete the following checklist as a self-evaluation of desirable personal qualities that lead to success in food production, management, and services. Place a "√" in the appropriate column to indicate your answer. Then use the checklist as a basis for evaluating your characteristics for being a foodservice manager.

| Personal Qualities | Yes | No | Unsure |
|---|---|---|---|
| 1. **Can you accept and delegate responsibility?** | | | |
| • Are you able to lead others? | | | |
| • Are you willing to accept responsibility? | | | |
| • Are you willing to let others take responsibility? | | | |
| 2. **Do you work well with people from different cultures and socio-economic levels?** | | | |
| • Do you like people? | | | |
| • Do people like you? | | | |
| • Do you enjoy helping others develop themselves? | | | |
| • Are you good at teaching others? | | | |
| • Are you patient? | | | |
| 3. **Are you dependable?** | | | |
| • Are you healthy? | | | |
| • Are you energetic? | | | |
| • Are you a good worker? | | | |
| • Are you willing to put your job ahead of your other interests? | | | |
| 4. **Are you trustworthy?** | | | |
| • Are you honest? | | | |
| • Do you have a high moral character? | | | |
| • Do you set a good example for others? | | | |
| • Are you willing to do the right thing even if it is not the popular thing? | | | |
| 5. **Are you self-motivated?** | | | |
| • Are you willing to work hard in order to succeed? | | | |

| Personal Qualities | Yes | No | Unsure |
|---|---|---|---|
| • Are you a self-starter? | | | |
| • Can you work without prodding, coaching, or supervision? | | | |
| **6. Do you appreciate good food?** | | | |
| • Do you know what makes food appealing to customers? | | | |
| • Do you know what makes food attractive? | | | |
| • Do you know what makes food taste good? | | | |
| • Are you willing to provide food the way the customer wants it? | | | |
| **7. Do you maintain high standards of neatness and cleanliness?** | | | |
| • Are you neat and clean in your personal appearance? | | | |
| • Do you stress good housekeeping and food sanitation in your present job? | | | |
| • Do you understand the difference between sanitary and clean? | | | |
| **8. Are you healthy?** | | | |
| • Do you have foot, leg, back, or other health problems that would hamper your job performance? | | | |
| • Do you take proper precautions to keep yourself healthy when working long hours and doing hard work? | | | |
| **9. Do you consider your intelligence level to be above normal?** | | | |
| • Do you have common sense? | | | |
| • Can you add, subtract, multiply and divide? | | | |
| • Do you pay attention to details? | | | |
| • Can you locate information quickly? | | | |
| • Are you able to make comparisons? | | | |
| • Can you visualize how things should look? | | | |

## Activity 34-1 (continued) • Evaluation

| Personal Qualities | Yes | No | Unsure |
|---|---|---|---|
| - Can you read, write, and speak well? | | | |
| **10. Are you enthusiastic?** | | | |
| - Are you enthusiastic about the foodservice business? | | | |
| - Are you an inspiration to others when problems occur? | | | |
| **11. Are you ambitious?** | | | |
| - Do you know your goals? | | | |
| - Do you complete the tasks you start? | | | |
| **12. Are you management-oriented?** | | | |
| - Are you a good organizer? | | | |
| - Can you make decisions? | | | |
| - Are you able to adapt to change? | | | |
| - Are you innovative? | | | |
| - Are you impartial and objective? | | | |
| - Can you make decisions under pressure? | | | |
| - Can you accept making mistakes and learn from them? | | | |
| **13. Are you loyal?**<br>- Do you believe in your organization? | | | |
| - Are you confident that the system, or policy, in your establishment is correct? | | | |
| **14. Are you willing to observe company policies?**<br>- Even when a task could be done several different ways, are you willing to follow your company's directions for doing it? | | | |
| **15. Are you willing and able to work the long hours required in foodservice?** | | | |
| - Are you willing to work when your friends are playing - nights, weekends, and holidays? | | | |
| - Are you physically able to work long hours, mostly on your feet and on the go? | | | |

## Activity 34-1 (continued) • Evaluation

Now add up the number for each response and place that number in the space provided.

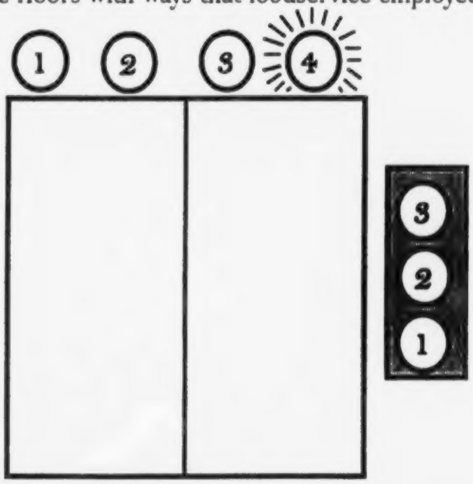
**YES** ____________ **UNSURE** ____________ **NO** ____________

- If your "YES" responses total 34 or greater, then a career in food management may be for you. In the space provided below, summarize some of the personal characteristics that will make you a good foodservice management candidate.
- If your total responses for "UNSURE" and "NO" numbered 35 or greater, use the space provided below to explain either (A) the personal changes you need to make in order to be better prepared for an occupation in this area, or (B) why you would not consider a career in foodservice management as the best choice for you.

## Activity 34-2 • Short Answer

**Directions**

The elevator illustrated below will help you rise to the foodservice management level. Label each of the three floors with ways that foodservice employees can reach the managerial level.



You have chosen foodservice management as a career goal. On which of the three floors would you enter? Explain your answer.

## Activity 34-3 • Matching

**Directions**

Match the term in the right column to the definition in the left column. Place the letter of the term in the blank provided to the left of the definition. Each term may be used once or not at all.

**Definitions**

____ 1. Provide guidelines for the operation of a business.

____ 2. Objectives that the foodservice operation wants or needs to meet to be financially successful.

____ 3. Provides the methods or means by which policies are carried out.

____ 4. Within an organization, these can change with time.

____ 5. A philosophy that encourages employment involvement.

____ 6. Act of directing and controlling the work of others.

____ 7. A group of people working together to achieve goals.

____ 8. Long-term objectives for organizations.

____ 9. The initial stages of the managerial process.

____ 10. A reference book written for the express purpose of adding direction to the total organization.

**Terms**

A. employee
B. goals
C. management
D. organization
E. organizational goals
F. planning
G. policies
H. Policy and Procedures Manual
I. procedure
J. strategic plans
K. Total Quality Management

## Activity 34-4 • Numbering

**Directions**

Listed below are the steps of the planning process. Number the steps in the order in which they should be used. Place the number in the blank to the left of the step. Use the number 1 for the first step of the planning process.

______ (A) Consider and weigh each alternative and possible outcomes.

______ (B) List different solutions.

______ (C) Select an alternative that meets the goal, objective, or problem most effectively.

______ (D) List outcomes (positive and negative) for each possible solution.

______ (E) Identify goals, objectives, or problems.

## Activity 34-5 • Short Answer

**Directions**

**Answer** the following items. Respond in the spaces provided.

1. List three sources that a foodservice manager can use to keep informed of the laws and regulations affecting foodservice operations. Also, list the type of information provided.
   (A) Source: ______
   Type of Information: ______
   (B) Source: ______
   Type of Information: ______
   (C) Source: ______
   Type of Information: ______

2. List two ways the foodservice manager can keep employees aware of the laws that affect foodservice operations.
   (A) ______
   (B) ______

## Activity 34-6 • Sentence Completion

**Directions**

**Complete** the following sentences by writing the best response in the space provided.

1. The Wage and Tax Statement is commonly referred to as a(n) ______.

2. Laws that govern the minimum age at which minors can be served this or work where this is served are ______ laws.

3. The federal law that sets minimum wage, overtime pay, record keeping, and child working standards for employers is the ______.

4. A federal or state insurance program designed to provide income for people who are not working but are actively seeking work is ______.

5. Money collected from an employee's wages as established by federal law is ______.

6. Laws regulating the age at which minors may work at foodservice jobs are ______.

7. The Federal Insurance Contribution Act (FICA ) is also known as ______.

8. The term that includes laws and regulations prohibiting discrimination is ______.

9. A state-regulated program designed to provide benefits to employees injured on the job is ______.

10. Regulations that are often established by state and local departments of health are ______ codes.

## *Activity 34-7 • Short Answer*

**Directions**

In the spaces provided, list and describe the five federal laws covered under Equal Opportunity Employment.

1. Law:

   Description:

2. Law:

   Description:

3. Law:

   Description:

4. Law:

   Description:

5. Law:

   Description:

# Chapter 35

# Food Cost Control

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 35:

7G Use appropriate terminology related to the food production and service industry.

9B Analyze the relationship of effective menu planning to successful food production operations.

9C Practice cost control techniques in food production operations.

9F Follow standardized recipes utilized in food production.

10F Practice cost control techniques in foodservice operations.

## Introduction

The heart of a financially successful foodservice organization is cost control. Without controls, the financial stability of the business is threatened. Cost controls are needed in purchasing, receiving, issuing and inventorying of food. Menus constitute the framework of cost control.

## *Activity 35-1 • True/False*

Directions

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. The heart of a financially successful enterprise in foodservice is cost control.

T F 2. Ineffective cost controls can threaten the financial stability of a foodservice operation.

T F 3. Purchasing and receiving food are two main areas of concern in foodservice cost control.

T F 4. Inventorying and issuing food provide the framework of cost control in foodservice.

T F 5. Menus do NOT help eliminate the guesswork involved when deciding what to serve and when to serve it.

T F 6. Menus are fixed or rotated.

T F 7. The only thing a menu is NOT used for is in helping managers decide what to buy or solving the "what-to-buy" dilemma.

T F 8. Menus offered by fast-food restaurants are fixed menus.

T F 9. Static menus change frequently.

T F 10. In cycle menus, a different menu always begins every six weeks.

## Activity 35-2 • Matching

**Directions**

Match the foodservice operation term with the best description. Place the letter of the term in the blank to the left of the description. Each letter may be used once or not at all.

**Descriptions**

______ 1. Includes equipment repair and maintenance charges.
______ 2. For this, foodservice operations rely on historical data.
______ 3. Money left after all expenses are paid.
______ 4. Includes the cost of supplies.
______ 5. Includes employee wages and benefits.

**Terms**

A. food cost
B. forecast
C. labor cost
D. overhead cost
E. profit
F. revenue

## Activity 35-3 • Multiple Choice

**Directions**

The following exercise will aid in reviewing the types of menu pricing, a la carte and table d'hote. For each item listed below select the best answer from the choices provided beneath each sentence. Place the letter of the response in the blank that is to the left of the numbered item.

______ 1. The term that means "from the list" is
A. al a carte
B. table d'hote

______ 2. The term that refers to the traditional menu pricing system is
A. al a carte
B. table d'hote

______ 3. The menu pricing system that offers complete meals consisting of several courses provided at one price is
A. al a carte
B. table d'hote

______ 4. The menu pricing system that lists and prices each menu item separately is
A. al a carte
B. table d'hote

______ 5. The menu pricing system that offers an extensive menu so that even infrequently ordered foods must be kept in stock is
A. al a carte
B. table d'hote

______ 6. The menu pricing system that allows the foodservice manager greater control over food costs and offered menus items is
A. al a carte
B. table d'hote

______ 7. The menu pricing system that can result in more menu items, higher food costs, and reduced flexibility is
A. al a carte
B. table d'hote

______ 8. The menu pricing system where the average amount spent per check tends to be higher is
A. al a carte
B. table d'hote

______ 9. The menu pricing system that offers more control over purchasing, and food costs tend to be lower is
A. al a carte
B. table d'hote

______ 10. The menu pricing system that may leave customers feeling overcharged by accepting foods they do not want is
A. al a carte
B. table d'hote

## *Activity 35-4 • Short Answer*

### Directions

The following exercises will aid you in using formulas for finding food cost percentage, selling price of food, cost of food, and determining selling price with a profit percentage calculated in.

(A) You are the owner of a taco stand. A standard taco contains the following ingredients at the listed cost per item:

| Ingredients | Cost |
|---|---|
| ground beef | $ .28 |
| taco shell | .03 |
| cheese | .12 |
| tomatoes | .04 |
| taco sauce | .08 |

1. The total cost of ingredients for one taco is $ ________________ .
2. Suppose you price the taco at a $ .89 selling price. Using the total cost of ingredients from problem #1, the food cost percentage is ________________ %.
3. Suppose the food cost percentage is 75%. Using the total cost of ingredients from problem #1, the selling price of the food item is $ ______________ .
4. Suppose the selling price is $ .89 and the food cost percentage is 40%. The cost of food is $ ________ .
5. Suppose the taco priced at $ .89 is a slow-moving item and the standard profit markup is 20%. With the profit percentage calculated in, the menu price of the taco is $ ____________________

(B) At your taco stand, you offer hot apple turnovers on the dessert menu. An apple turnover contains the following ingredients at the listed cost per item:

| Ingredients | Cost |
|---|---|
| pastry sheet | $ .14 |
| apple filling | .19 |
| frying oil | .03 |
| cinnamon topping | .01 |

6. The total cost of ingredients for one hot apple turnover is $ __________________ .
7. Suppose you price the apple turnover at a $ .69 selling price. Using the total cost of ingredients from problem #6, the food cost percentage is ________________%.
8. Suppose the food cost percentage is 75%. Using the total cost of ingredients from problem #6, the selling price of the food item is $ ______________ .
9. Suppose the selling price is $ .69 and the food cost percentage is 40%. The cost of food is $ ________ .
10. The hot apple turnover priced at $ .69 is a dessert item and the standard profit markup is 40%. With the profit percentage calculated in, the menu price of the turnover is $ ______________ .

## Activity 35-5 • Short Answer

**Directions**

To review the developing, testing, and costing of standardized recipes, respond to the following questions. Write your answers using the blanks provided.

1. What is a standardized recipe? ____________________

2. In what two ways do standardized recipes help control costs?
(A) ____________________ (B) ____________________

3. How does using standardized recipes help in reducing labor costs? ____________________

4. What is a "personnel turnover rate"? ____________________

5. How does using standardized recipes help to maintain food quality despite a high personnel turnover rate? ____________________

6. What are three sources for obtaining standardized recipes?
(A) ____________________ (C) ____________________
(B) ____________________

7. What is the first step a foodservice operation should take BEFORE including a standardized recipe in the menu? ____________________

8. What are the seven components of a standardized recipe?
● ____________________
● ____________________
● ____________________
● ____________________
● ____________________
● ____________________
● ____________________

9. On a written recipe form, how do the drawn lines between major steps help foodservice workers? ____________________
(A) Would this be a form of food cost control, labor cost control, or both? ____________________
(B) Explain your answer. ____________________

## *Activity 35-5 (continued) • Short Answer*

10. Why are recipe food ingredients listed by weight?
    (A) Is this an example of food cost control, labor cost control, or both?
    (B) Explain your answer.

11. Amounts of ingredients should be written in yields of what two-sized servings?

12. What procedures are suggested for implementing standardized recipes used in a foodservice establishment?

13. What occurs when foodservice workers do not follow standardized recipes?

14. Evaluating standardized recipes is based on what five criteria?
    1.
    2.
    3.
    4.
    5.

15. What is the procedure for pre-costing a recipe?

# Chapter 36

## Acquisition and Storage of Food and Supplies

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 36:

7G Use appropriate terminology related to the food production and service industry.
8E Follow appropriate procedures for the acquisition, preparation, handling, and storage of food and supplies.
10G Apply available technology in foodservice.
14B Exhibit ethical practices as defined by the food production and service industry.

### Introduction

Two areas that must not be neglected by foodservice management are purchasing and inventory. Few successful foodservice establishments can be operated without a good purchasing agent (often the manager) and a well-established inventory control system.

# Activity 36-1 • Multiple Choice

## Directions

Complete the sentences below by choosing the best response from the choices listed under each of the sentences. Write the letter of the response in the blank provided at the left of the sentence.

________ 1. In foodservice operations, the person NOT charged with the buying of food and supplies is a.

A. buyer
B. purchasing agent
C. purveyor
D. steward

________ 2. Food purchases are based on.

A. bargains, season of the year, and supply inventory.
B. labor cost, skill of personnel, and professional ethics.
C. menu, food budget, and food availability.
D. past use, professional ethics, and supply inventory.

________ 3. An effective buyer needs knowledge regarding.

A. computer software programs.
B. money available for purchases.
C. proper procedures for canning foods.
D. sales forecasts for the entire year.

________ 4. Professional ethics is best described as.

A. doing the right, fair, and legal thing.
B. behavior not suitable for a professional.
C. the manner in which one behaves.
D. reacting in a specified way.

________ 5. Food and supplies can be purchased from.

A. jobbers, dealers, and receiving clerks.
B. purchasing agents, vendors, and dealers.
C. purveyors, purchasing agents, jobbers.
D. purveyors, vendors, and dealers.

## Activity 36-2 • Short Answer

**Directions**

Read the following items and write your response in the spaces provided.

1. To be an effective buyer, the foodservice manager must have practical knowledge about food products. List 5 areas of knowledge needed by buyers.
   (A) ______
   (B) ______
   (C) ______
   (D) ______
   (E) ______

2. List 5 personal qualities that exhibit high standards of professional ethics.
   (A) ______
   (B) ______
   (C) ______
   (D) ______
   (E) ______

3. List 5 basic principles buyers should observe when purchasing food and supplies.
   (A) ______
   (B) ______
   (C) ______
   (D) ______
   (E) ______

4. List the 5 steps to effective food and supply purchasing.
   (A) ______
   (B) ______
   (C) ______
   (D) ______
   (E) ______

# *Activity 36-3 • Matching*

## Directions

Match the purchase specification in the right column to the description in the left column. Place the letter of the purchase specification in the blanks provided to the left of the description. Each letter may be used more than once.

## Descriptions

______ 1. Aids in making substitutions when necessary.

______ 2. Includes specifications for weight, size, count, pack, style, and degree of ripeness.

______ 3. Tell number of usable portions of the purchased amount.

______ 4. Give overall serving costs.

______ 5. Ensures that product is healthful.

______ 6. Classifies foods by a descriptive term or a number to ensure uniform quality.

______ 7. Give seasonal price variations, peak demand periods, quality variations, and overall serving costs.

______ 8. Ensures that product is nutritious.

______ 9. Aids in choosing the appropriate type or grade.

______ 10. Aids in choosing an amount that can be used within a reasonable period of time without waste.

## Purchase Specifications

A. container sizes
B. financial factors
C. grade
D. other
E. use of product
F. wholesomeness
G. yields

## Activity 36-4 • Sentence Completion

**Directions**

Complete the following items by placing the best response in the spaces provided.

1. When standardized recipes are used, buyers can develop a file of ____________________.

2. The most common credit terms offered to buyers from suppliers are ____________________.

3. The size or type of container in which food is sold is the ____________________.

4. Sources for staple foods include wholesale grocers or ____________________.

5. In small restaurants, the buyer may be the manager or a ____________________.

6. If tomatoes are sold at $ .59 per pound, that cost is the ____________________.

7. Discounts offered to buyers if the bill is paid in full before a certain date are credit terms or ______________________________ terms.

8. The person who does the count and weight check on incoming merchandise might be referred to as the ______________________________.

9. Computer software programs are making it possible to order products ____________________.

10. The form used to order food and supplies is known as a(n) ______________________________.

11. Frequently purchased foods that often make up the largest part of the total food purchase are ______________________ foods.

12. Suppliers that sell a wide array of items used by foodservice operations are now known as ______________________.

13. For each item ordered, quality and quantity information are used to make ______________________ specifications.

14. To obtain foods and supplies from the storeroom, workers list needed items on a ________________.

## Activity 36-4 (continued) • Sentence Completion

15. Processed and packaged foods that can be ordered in large quantities due to their longer shelf life are termed ________________.

16. In purchasing terms, the standard abbreviation *AP* stands for ____________________.

17. The practice of obtaining prices from a number of suppliers is referred to as ________________.

18. On a purchase order, multiply the unit cost by the quantity ordered to find the ______________.

19. Foods and supplies delivered by the seller without charge to the buyer are labeled as __________.

20. Breads, rolls, pastries, milk, ice cream, and coffee are considered prepared and ________________ foods.

## Activity 36-5 • True/ False

Read each statement. If the statement is **True**, circle the letter **T** to the left of the statement. If the statement is **False**, circle the letter **F**. If the statement is **False**, rewrite the statement making it a **True** statement.

T F 1. Costly losses can result from careless delivery checks of count, weight, and quality of food and supplies.

________________________________________________________________

T F 2. Methods of receiving are the same from one foodservice operation to another.

________________________________________________________________

T F 3. Delivered food and supplies are accepted by the foodservice operation regardless of any damages or nonconformity to specifications.

________________________________________________________________

T F 4. To save on costs, large inventories should be maintained.

________________________________________________________________

T F 5. When receiving a delivery, receiving clerks need only to copy the information from the invoice or delivery ticket.

________________________________________________________________

## *Activity 36-5 (continued) • True/ False*

T F 6. Errors in deliveries seldom occur.

T F 7. To prevent pilfering, the storeroom should be kept locked.

T F 8. Costly losses can result from improper storage.

T F 9. The purpose of a requisition form is to track the number of employees visiting the storeroom.

T F 10. End-of-the-month evaluation of inventory records can indicate how much money is tied up in food supplies.

## *Activity 36-6 • Short Answer*

**Directions**

The Lamplighter Dinner House has a $2,300 food and supplies bill from Sysfoods, Inc. Using the 2/10:NET 30 credit term, answer the following by placing your response in the space provided.

1. In dollar amounts, how much will the restaurant manager save if the bill is paid on or before the tenth day of the month? ____________________
2. What is the total dollar amount due if the bill is paid on or before the tenth day of the month?
3. What is the total dollar amount due if the bill is paid after the tenth of the month?

# Chapter 37

# Finance and Accounting

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 37:

1D Analyze the impact of technological innovations on the food production and service industry.
2A Identify policies related to wages, benefits, and performance of employees.
3G Practice effective management resources.
7G Use appropriate terminology related to the food production and service industry.
10G Apply available technology in foodservice.

## Introduction

Accounting and recordkeeping, budgeting, cost control, and money handling are important parts of the foodservice operation's financial management system. Trained bookkeepers and accountants are usually employed for these tasks.

Many times, however, foodservice managers are responsible for bookkeeping and accounting responsibilities. These managers must be thoroughly familiar with accounting procedures.

## *Activity 37-1 • Matching*

### Directions

Match the terms with their definitions by placing the letter of the term in the blank provided to the left of the definition. Terms may be used more than once.

### Definitions

______ 1. Foodservice managers often conduct this to determine where income and expenses are equal.

______ 2. Include time schedules, time cards, and social security that must be kept for tax and insurance purposes.

______ 3. Compares the cost of food purchased, food sold, and operating expenses against total sales.

______ 4. Tells what the operation owns and owes.

______ 5. Foodservice managers often engage the services of a licensed accountant to assist in keeping these.

______ 6. Aids in the distribution of labor in a fair and equitable manner.

______ 7. Record number of hours worked and time taken off by the employee.

______ 8. Cities and states require that foodservice operations obtain and maintain these in order to serve food and beverages to the public.

______ 9. Lists the assets and liabilities and owner's equity of the foodservice establishment.

______ 10. A summary of the foodservice operation's business transactions during an accounting period.

### Terms

A. balance sheet
B. break-even analysis
C. employee records
D. employee schedule
E. operator's license
F. profit/loss statement
G. tax records
H. time cards

# Activity 37-2 • Case Study

## Directions

**Read the following case study. Complete the balance sheet using the information from the case study.**

Roberta and Eugene Munoz plan to open their restaurant, Dominic's, next week. To supplement their own $ 9,300 investment in the business (owner's equity), they have obtained a loan (bank note) for $17,000 to cover their initial start-up costs. The start-up capital has been spent on a $ 750 remodeling job that has made the building more convenient for a restaurant. They spent $ 4,300 for a used truck to deliver phone-in orders, $ 7,437 for stationary kitchen equipment, $ 2,641 for hand kitchen equipment, $ 3,489 for dining room furniture and fixtures, and $ 2,178 for tableware, glassware, flatware, and linens. Of the remaining cash on hand of $5,505, a portion is reserved for initial inventory such as food and beverages and other supplies. Everything else will be maintained for emergencies and ongoing expenses.

Since Roberta and Eugene have invested everything they have in the new business, they are anxious for it to be successful. Roberta wants you to prepare a balance sheet to determine exactly where the business stands financially at the time the restaurant opens.

**DOMINIC'S RESTAURANT: Balance Sheet**

| | | |
|---|---|---|
| Assets | | |
| **Current Assets:** | | |
| Cash (in bank and on hand) | $ ________ | |
| Total Current Assets: | | $ ________ |
| **Fixed Assets:** | | |
| Vehicles | $ ________ | |
| Property Remodeling | ________ | |
| Stationary Kitchen Equipment | ________ | |
| Hand Kitchen Equipment | ________ | |
| Dining Room Furniture and Fixtures | ________ | |
| Tableware, Glassware, Flatware, Linens | ________ | |
| Total Fixed Assets: | | $ ________ |
| **Total Assets (Current and Fixed)** | | **$ ________** |
| Liabilities and Owner's Equity | | |
| **Current Liabilities:** | | |
| Bank Notes Payable | $ ________ | |
| Total Current Liabilities | | $ ________ |
| | | |
| Total Owner's Equity | | $ ________ |
| **Total Liabilities and Owner's Equity**<br>*NOTE: (Total Liabilities and Owner's Equity should equal Total Assets)* | | **$ ________** |

## *Activity 37-3 • Short Answer*

### Directions

Complete the profit and loss statement for Seaside Restaurant by using information found in the following case study.

The owners of Seaside Restaurant want to prepare a profit and loss statement for their business. As all the figures for the year were accumulated, the total sales through the month of November were $ 840,400 with the total sales for the month of December being $ 76,400. Their inventory at the beginning of the year was $ 103,200. During that same month, Seaside Restaurant made purchases that totaled $ 25,700 in addition to the $ 282,700 worth of purchases made that year. The final inventory at the end of the year totaled $ 101,400. The total amount paid to meet the payroll was $ 194,400. The Seaside Restaurant's rent and utilities for the year totaled $ 12,780 and $ 16,308 was paid in taxes and insurance. Additional expenses included $ 1800 for advertising; $ 6,564 for repairs and maintenance; and $ 2,340 for laundry and linens.

**SEASIDE RESTAURANT: Profit and Loss Statement**

| | | |
|---|---|---|
| Total Sales | | $ ______ |
| | | |
| Food Cost: | | |
| Inventory at the beginning of year | $ ______ | |
| Food purchases during the year | ______ | |
| Total Food Cost: | $ ______ | |
| Less final inventory | – ______ | |
| Cost of food sold | $ ______ | |
| **Gross Profit:** | | $ ______ |
| Expenses: | | |
| Salaries | $ ______ | |
| Other Expenses: | | |
| Rent and utilities | $ ______ | |
| Taxes and insurance | ______ | |
| Advertising | ______ | |
| Repairs and maintenance | ______ | |
| Laundry and linens | ______ | |
| Total other expenses: | $ ______ | |
| **Total Operating Expenses:** | | $ ______ |
| Net Profit | | $ ______ |

# Activity 37-4 • Short Answer

**Directions**

To review computer usage in foodservice establishments, respond to the questions. Write your answers in the blanks provided.

1. What are three possible applications of a computer in foodservice operations?
   (A) ____________________
   (B) ____________________
   (C) ____________________

2. What are the two most common uses of computers in foodservice?
   (A) ____________________
   (B) ____________________

3. What are four things that computerized cash registers can keep track of?
   (A) ____________________
   (B) ____________________
   (C) ____________________
   (D) ____________________

4. What is the purpose of linking cash registers from several foodservice operations to a bigger central computer? ____________________
   ____________________

5. What are seven accounting purposes that the computer may be used for in foodservice?
   (A) ____________________
   (B) ____________________
   (C) ____________________
   (D) ____________________
   (E) ____________________
   (F) ____________________
   (G) ____________________

6. Name three of the newer foodservice application programs.
   (A) ____________________
   (B) ____________________
   (C) ____________________

## Activity 37-5 • Short Answer

**Directions**

For six months, you have worked as an assistant manager at a restaurant that is part of a small restaurant chain. The business is growing and the manager has decided to purchase a computer system for the business. Since there is such a wide variety of hardware and software available and it will be fairly expensive, the manager is asking you and fellow assistant managers for some input. In the space provided, write ten guidelines to follow when selecting computer hardware or software for the foodservice establishment.

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________
10. ______________________________

# Chapter 38

# Human Resources and Productivity

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 38:

2A Identify policies related to wages, benefits, and performance of employees.
3C Explain management functions in food production and service operations.
3F Analyze issues affecting management of human resources.
7G Use appropriate terminology related to the food production and service industry.
12B Demonstrate effective methods to secure, maintain, and terminate employment.

## Introduction

One of the most important elements in a successful foodservice operation is the staff. Considerable time and effort is required to recruit, hire, and train qualified foodservice workers. Once employed, these workers are key to carrying out various cost controls, maintaining quality control, and developing good customer relationships.

## Activity 38-1 • Short Answer

**Directions**

To review the procedures for writing job descriptions, respond to the following items. Write your answers in the blanks provided.

1. Define *job description*. ____________________

2. Before writing a job description, two types of analyses should be conducted. List them and provide a brief description of each.
   (A) Type of analysis: __________ Description: ____________________
   (B) Type of analysis: __________ Description: ____________________

3. When writing job descriptions, foodservice managers should consider future changes that may affect the position. Write a short paragraph explaining how one of the following might affect an employee's job description: *purchase of new equipment, menu changes,* or *variations in customer tastes and patronage.*

# *Activity 38-2 • Matching*

## Directions

**Listed below** are procedures for hiring, orienting, and training employees. Match each procedure to the correct term by placing the appropriate letter in the blank to the left of each procedure.

## Terms

**H** = hiring
**O** = orientation
**T** = training

## Procedures

_____ 1. The worker is informed about benefits such as vacation, sick leave, meals, and insurance.

_____ 2. A record of the interview is kept.

_____ 3. An employee is given an explanation of why training is needed.

_____ 4. A tour of the facility is provided.

_____ 5. Positive and pleasant aspects are stressed using praise and ego building techniques.

_____ 6. The applicant is matched with jobs available.

_____ 7. Sanitation, safety, rules, and regulations are explained.

_____ 8. Competitive wages and benefits are offered.

_____ 9. A careful screening with reference checks is conducted.

_____ 10. The worker is allowed to help set goals.

_____ 11. The worker is shown where to obtain food, supplies, tools, and equipment needed.

_____ 12. Questions from the job applicant are encouraged.

_____ 13. An employee is shown how to perform tasks.

_____ 14. Previous experience, personal hygiene, and personality are considered.

_____ 15. This is essential when new equipment is purchased.

_____ 16. Sessions are kept from fifteen to twenty minutes each.

_____ 17. A person's ability to learn tasks of the job is perceived.

_____ 18. The employer's personal likes and dislikes should not be an influence.

_____ 19. Employees must have or acquire skills needed.

_____ 20. It is preferable to teach or complete the task in one session.

_____ 21. Time is allowed for practice.

_____ 22. An introduction to co-workers and supervisors is given.

_____ 23. The tasks are introduced in order of which they are to be completed.

_____ 24. The employee's needs and aspirations are considered for determining workload.

_____ 25. This takes place when new facilities are opened.

## Activity 38-3 • Defining

**Directions**

Listed below are techniques used for developing and coordinating work schedules. Using the blanks provided, write a description of each.

1. Labor cost budgets: ______
2. Irregular scheduling: ______
3. Split-shift scheduling: ______
4. Part-time employees: ______
5. Staffing tables: ______

## Activity 38-4 • Short Answer

**Directions**

To review personnel and production management, respond to the following questions. Write your answers in the blanks provided.

1. When developing work schedules, foodservice managers must be aware of several factors that influence the scheduling of employees. List five.
    1. ______
    2. ______
    3. ______
    4. ______
    5. ______
2. Listed below are three types of job separations. Write a brief description of each.
    (A) Firing: ______
    (B) Layoffs: ______
    (C) Voluntary separation or quitting: ______
3. What is the purpose of an exit interview? ______
4. When is a person generally eligible for unemployment benefits? ______

# Activity 38-5 • Matching

## Directions

Match the labor cost control technique with the best description. Place the letter of the technique in the blank to the left of the description.

## Labor Cost Control Techniques

A. job description
B. production schedule

## Descriptions

_____ 1. Provides a record of foods prepared for a meal.
_____ 2. Makes use of a job analysis to identify the tasks performed by each worker.
_____ 3. Reschedules workers to meet demands at peak and slow periods.
_____ 4. Aids manager in planning the use of leftovers.
_____ 5. Helps to increase the likelihood of employee satisfaction.
_____ 6. Requires a completed job and task analysis.
_____ 7. Saves steps by rearranging equipment, kitchen, and service areas.
_____ 8. Keeps track of number of customers served.
_____ 9. Helps to eliminate or re-assign certain tasks.
_____ 10. Helps determine what items may be profitable for the foodservice operation.
_____ 11. Makes use of past records to decide how many servings of each menu item should be provided.
_____ 12. Aids in selecting the best person for a job.
_____ 13. Records any variation in the yield when recipes are prepared.
_____ 14. Helps make the hiring process more effective.
_____ 15. Explains the requirements and responsibilities of a job.
_____ 16. Makes use of interviews and observations.
_____ 17. Determines the best way to utilize available labor.
_____ 18. Keeps track of the amount of leftover food.
_____ 19. Shows the number of servings to prepare for each meal.
_____ 20. Makes use of a task analysis to identify the steps performed in each task.

## Activity 38-6 • Short Answer

**Directions**

Listed below are five benefits of production and quality control. Briefly explain how each is beneficial to a foodservice operation.

1. Establishment of standards

2. Establishment of high production and quality levels for employees to model

3. Good public relations

4. Increased customer satisfaction

5. Support for other cost control systems

# Chapter 39

## Marketing

### Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 39:

1B Describe market segments in the food production and service industry.

2D Analyze the relationship of multicultural awareness to target markets and customer services.

3D Explain components of a strategic business plan.

4C Explain the relationship of concept, market segment, menu, and theme in commercial foodservice.

4F Explain how the menu reflects the foodservice plan for meeting customer needs and wants.

5A Analyze various types of marketing strategies.

5C Explain the types of direct marketing materials.

5D Explain the use of special events and promotions in the food production and service industry.

7G Use appropriate terminology related to the food production and service industry.

11A Identify potential clients and their foodservice needs.

11C Analyze various companies' practices regarding customer satisfaction.

### Introduction

In today's marketplace, a foodservice operation that is financially successful is engaged in some type of marketing. Foodservice managers understand marketing strategies, how to use them effectively, and how well planned marketing programs can boost sales and promote good public relations.

Marketing means presenting the product in such a manner that people buy it. In foodservice, "the product" includes the food, service, prices, and surrounding atmosphere. Marketing activities include advertising, sales promotion and presentation.

## Activity 39-1 • Matching

### Directions

Match the type of marketing procedure with the best characteristic. Place the letter of the marketing procedure in the blank to the left of the characteristic. Each letter may be used more than once.

### Characteristics

______ 1. Potential customers
______ 2. Location
______ 3. Color and design
______ 4. Newspapers
______ 5. Type of foodservice operation
______ 6. Appearance of building
______ 7. Campaign objectives
______ 8. Radio
______ 9. Materials
______ 10. Public areas (lobby, restrooms, dining area)
______ 11. Budget to be used
______ 12. Size
______ 13. Potential customer characteristics
______ 14. Type of media
______ 15. Food
______ 16. Format
______ 17. Generate the message
______ 18. Evaluation of effectiveness
______ 19. Prices
______ 20. Text
______ 21. Seating capacity
______ 22. Direct mail
______ 23. Magazines
______ 24. Foodservice personnel
______ 25. Television

### Types of Marketing Procedures

A. advertising process
B. form of advertising
C. market study step
D. menu format factor
E. product study factor

## Activity 39-2 • Illustrating

### Directions

When a menu is presented to a customer it can act as a powerful merchandising tool. Menus are as varied as the foodservice operation they represent and they can be created in a variety of forms. Menus can be printed, handwritten, or computer generated. Some are written on chalkboards, dry-erase boards, or wooden planks. Whatever form is used, the menu should be clean, readable, limited to a reasonable number of items, organized so items can be relocated quickly, written in language customers can understand (descriptive, but simple), easy to change as prices or items change, in line with budget, designed to sell the items you want to sell, and planned to fit the operation.

Using the menu form made available on the following page or on paper provided by your teacher, create your own menu keeping the above criteria in mind. You may choose to use colored pencils, markers, crayons, colored ink pens, and pen and pencil in creating your menu. Create a lunch menu that includes the following items:

- Menu items with prices
- Three types of sandwiches
- Salads
- Soups
- Combinations of the above such as a soup and sandwich combo
- A special of the day
- Three types of beverages
- Three types of desserts
- One special dessert of the day

Use the spaces provided to respond to the following:

- Identify the type of establishment (i.e., deli, fast food, family restaurant).
- Describe the demographics of the customers.
- Describe the materials used in the menu design and provide reasons for your choices (i.e., laminated for longer wearing).
- Describe the color, design, and theme – how does the menu design carry-out the message of the establishment?
- Describe the text used and provide reasons for your choices.

## *Activity 39-2 (continued) • Illustrating*

Respond to the following items regarding your menu:

1. Identify the type of establishment: ______
2. Describe the demographics of the customers: ______
3. Describe the materials used in the menu design and provide reasons for your choices: ______
4. Describe the color, design, and theme of your menu - how does the menu carry-out the message of the establishment? ______
5. Describe the text used and provide reasons for your choices: ______

# *Activity 39-3 • Sentence Completion*

**Directions**

**For each item** below, write the word(s) in the blank provided that best completes the sentence.

1. A study of the food, service, price, and surroundings of a foodservice operation is a(n)____________ study.

2. Folded cards that stand on customer tables and that are used for advertising are called__________.

3. Media attention drawn to the foodservice operation is known as ____________________.

4. The way a business lets customers know where the foodservice operation is and what it has to offer is done through ______________________.

5. Presenting the product in such a manner that people buy it is accomplished through ___________.

6. Special ways of presenting foods to a customer are known as ________________.

7. Sheets that are attached to the menu and are used to sell a special item are called_______________.

8. Short-term incentives used to encourage the purchase of a product are referred to as ____________.

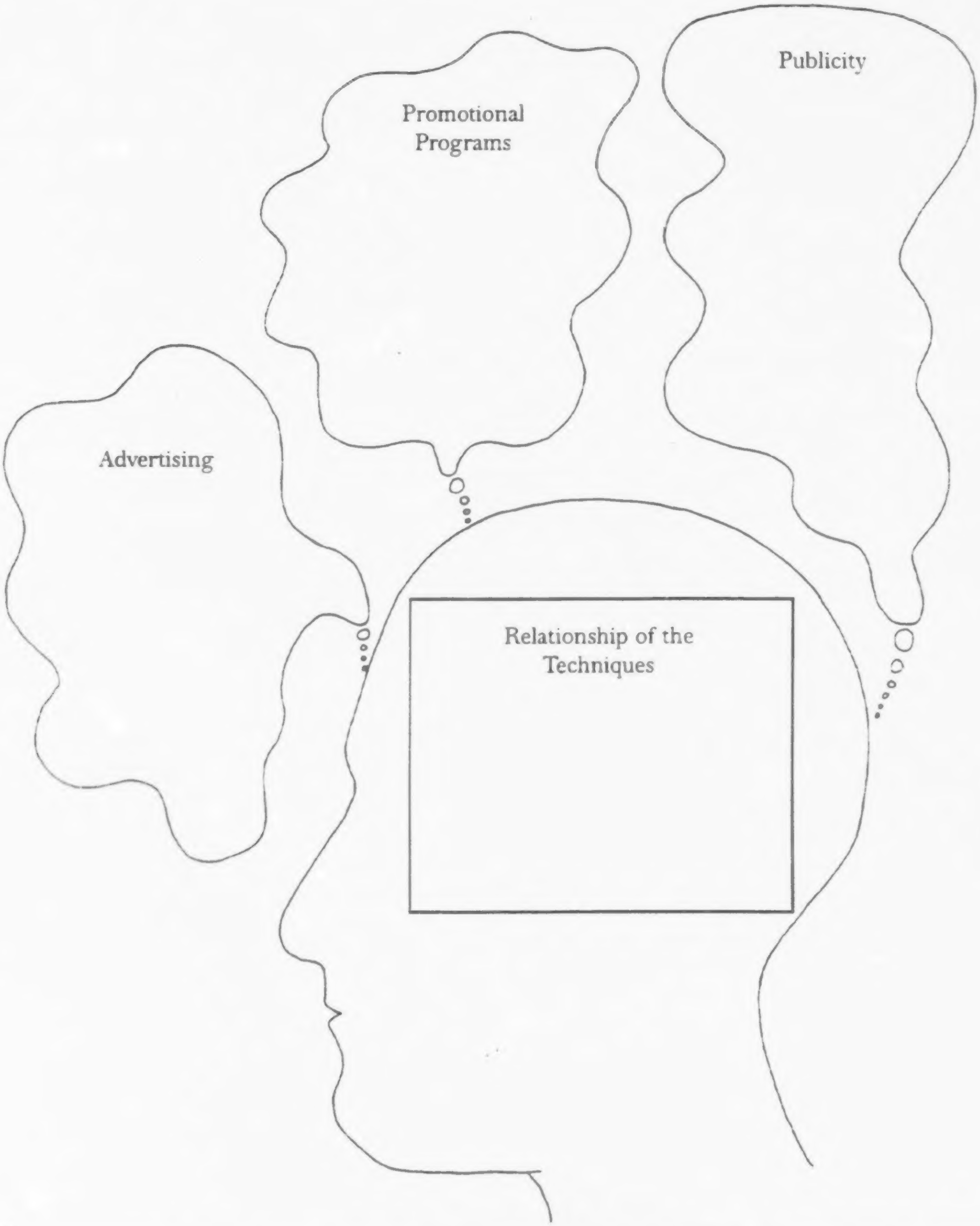
9. A study used to find out who is buying or who might buy a product is a(n) ______________________ study.

10. Essentially, all the available and potential customers of a product are referred to as a(n)__________.

# *Activity 39-4 • Short Answer*

## Directions

Three merchandising techniques used in foodservice operations are given below. Write a description of each technique in the "thought clouds" below. When you have described the techniques, write your interpretation of the relationship of the three techniques in the box provided.


Promotional Programs
Publicity
Advertising
Relationship of the Techniques

# Chapter 40

# Building and Maintaining Customer Relations

## Chapter Focus

The following Essential Knowledge and Skills are discussed in Chapter 40:

5B Describe the roles of public relations and publicity in the food production and service industry.

5E Apply available technological innovations utilized in the food production and service industry to enhance sales and marketing strategies.

10G Apply available technology in foodservice.

11B Compare various ways of building and maintaining client-based services.

11E Utilize strategies for complaint resolution.

11H Implement quality assurance standards in all aspects of the food production and service industry.

11G Evaluate criteria affecting quality service.

## Introduction

Public relations are the measures a business takes to win community respect. Sound public relations must be based on quality food served by well-trained foodservice employees who take pride and satisfaction in their work. Public relations are based on good management with healthy relationships maintained between management and employees, customers, the community, and stockholders of the company.

There are close interrelationships between advertising, promotional programs, and the foodservice operation's public relations. If used properly, advertising and promotions can foster positive feelings toward the foodservice establishment. Many messages sent to the surrounding community are silent but effective. These include the gracious treatment of customer's special needs, (such as assistance to elderly and physically disabled persons); the production of informative and professional advertisements, and the maintenance of quality food and service. Foodservice managers take notice of effects of marketing techniques and take steps to ensure these results speak well of the foodservice organization.

## Activity 40-1 • Short Answer

### Directions

Respond to the following questions by writing your answers in the blanks provided.

1. What is meant by the term *public relations*? ______________________________

______________________________

2. What are public relations based on? ______________________________

______________________________

3. Foodservice establishments send silent messages to the surrounding community when using advertising and promotions. What are three types of silent messages?

(A) ______________________________

(B) ______________________________

(C) ______________________________

4. What is a *quality assurance program*? ______________________________

______________________________

5. What does a quality assurance program measure? ______________________________

______________________________

6. What is the employee's role in guest satisfaction? ______________________________

______________________________

7. Often, foodservice managers try to help their employees feel empowered to solve customer problems. What is meant by *empowerment*? ______________________________

______________________________

8. How does employee empowerment help in customer satisfaction? ______________________________

______________________________

# Activity 40-2 • Short Answer

**Directions**

Most potential problems in foodservice establishments can be avoided by paying careful attention to customer needs throughout the meal. Read the situations below. On the lines provided, tell what an employee might do to establish good customer relations.

1. The special lunch feature for the day is grilled salmon steaks. Before ordering, a customer asks the foodserver's opinion of the featured special. This particular foodserver does not care for any type of fish so has not tasted the salmon. ____________________________________________________________________________

2. The sun is shining in a customer's eyes. ________________________________________________________

3. A customer enters the foodservice establishment with a seeing-eye dog. ________________________________________________________

4. The customers at Table 3 are relaxing after their meal. ________________________________________________________

5. A young couple with a toddler comes in for dinner. ________________________________________________________

6. A foodserver working the counter area closest to the cash register notices a customer ready to pay the bill but there is no cashier or manager around to take the money. Also, the foodserver has a table ready to place a food order. ________________________________________________________

7. A customer in one foodserver's section asks a different server for mustard. ________________________________________________________

8. A customer returns to a foodservice establishment after picking up a To-Go order. The customer claims that French fries were ordered and paid for but were not included in the take-out package. ________________________________________________________

9. A customer calls to make dinner reservations for a party of approximately 12 people planning a birthday celebration. ________________________________________________________

10. An employee visiting the public restroom notices that it requires cleaning and restocking of products. ________________________________________________________

## *Activity 40-3 • Short Answer*

**Directions**

(A) **Complete** the following boxes with steps in handling guest complaints, and steps in the Win/Win problem solving procedure. Then, respond to the items listed at the bottom of this page.

| Steps in Handling Guest Complaints | Win/Win Problem Solving |
|---|---|
| 1. | 1. |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. |
| 5. | 5. |
| 6. | 6. |
| 7. | 7. |
| 8. | |

(B) Compare the two procedures and answer the following items.

1. Provide three ways in which the two procedures are alike:
   (A) ____________________
   (B) ____________________
   (C) ____________________

2. Provide two ways in which the procedures are different:
   (A) ____________________
   (B) ____________________

3. Which of the two procedures do you prefer and think that you would use as a guideline for handling customer complaints?____________________
   Explain your answer. ____________________
   ____________________
   ____________________

## *Activity 40-4 • Short Answer*

**Directions**

**Respond** to the following questions regarding techniques used to handle customer complaints. Use the sample customer comment card shown below to help in answering the questions. Place your answers in the blanks provided.

# Happy Time Restaurant

## How are we doing?

Date: 3/27 Time: 9:00 p.m. Server: Jo

| | | | |
|---|---|---|---|
| Please Rate | Excellent | Satisfactory | Unsatisfactory |
| Service | | X | |
| Food | X | | |
| Cleanliness | | | X |
| Overall Opinion | | X | |

Additional Comments: *Our bowling team comes in every week. We love the food, and your prices are great. But we have noticed that it is hard to find a clean table. There is always trash, such as napkins and straws, laying around on the floor. We would be much happier in a tidier restaurant!!!*

1. As the manager, what should you do when several of these cards express similar feelings about the foodservice establishment? ____________________

   ____________________

2. What is this customer's overall opinion of the foodservice operation? Why? ____________________

   ____________________

3. Referring to the comments on the card, what two reasons would validate incorporating the customer's suggestions into the foodservice operation?

   (A) ____________________

   (B) ____________________

## *Activity 40-5 • Writing*

### Directions

Most people have experienced one or more displeasing situations when dining in a foodservice establishment. Think of an unhappy experience that you or someone you know has had while dining out. Summarize the problem and then give a brief explanation of how the situation was managed. Address whether you or someone else brought the matter to the attention of the foodservice employee or manager and whether, in your opinion, the matter was handled properly and professionally. If there was a problem but no complaint was made, address why or why not. Then, speculate on how you think the situation could have been best handled. NOTE: There are no right or wrong answers.

**The Situation or Problem:**

**How the Matter was Handled (or could be handled):**

## *Activity 40-6 • Short Answer*

**Directions**

Foodservice managers are incorporating procedures to help "empower" employees in solving problems for customers. These policies help employees better meet the guest needs and help guarantee their satisfaction with the establishment. Below are case scenarios involving employee empowerment situations. Read the scenario. On the lines provided, respond to the best action for the foodserver/employee to take.

1. Lucy delivers a dinner salad to her first customer of the evening. The guest sees the dressing on top of the salad and claims that she ordered the dressing on the side. Lucy does not remember this request and it is not noted on the customer check. What should Lucy do?____________________

2. Patrick is serving a large group consisting of both adults and teens. When the host orders wine, Patrick is instructed to bring wineglasses for everyone - including the under-age teens. What should Patrick do?____________________

3. While giving the cashier a break, Susan accepts payment for a customer's check. She takes the bill offered by the customer, puts it in the cash drawer and makes change from $10. The customer claims to have handed Susan a $20 bill, not a $10 bill. What should Susan do?____________________

4. While serving drinks at a large table, Herman spills iced tea on a customer. The customer leaps from his seat. What should Herman do?____________________

5. Cyndi, a new foodserver, is having trouble keeping up with the fast pace during the lunch rush. She takes a long time in getting to a table and when she finally does, the customers are upset at having had to wait so long. What should Cyndi do?____________________

CE081108

## *FOOD PRODUCTION, MANAGEMENT, AND SERVICES*
## *OCCUPATIONALLY SPECIFIC COURSE MATERIALS*
## *FALL 2000 UPDATE*

The Curriculum Center for Family and Consumer Sciences is in the midst of a three-year process to develop a new series of instructional materials for seven occupationally specific training areas. Each series will consist of a *Reference Book* (text for students), *Student Activity Book*, and *Curriculum Guide* (teacher's resource).

The *Reference Book* and *Student Activity Book* for Food Production, Management, and Services are available as of fall 2000. The new Curriculum Guide is targeted for availability in fall 2002.

The attached crosswalk can be used to correlate content of the new 2000 publications with the 1993 curriculum guide for the predecessor course.

Certainly, the new publications contain additional and updated content that will not be found in the 1993 curriculum guide; thus, instructional strategies will not be found for all content in the new reference book. Also, the answer keys in the curriculum guide do not correspond to the new reference and activity books. However, the curriculum guide does contain many learning and evaluation experiences and teaching aids that are still applicable.

Tools such as this crosswalk, the TEKS Implementation Supplement, and the Training Plan Masters will assist the teacher in effectively utilizing all student and teacher components of the occupational series in the interim until the new Curriculum Guides are available.

*The Curriculum Center for Family and Consumer Sciences*
*Texas Tech University, Box 41161, Lubbock, TX 79409-1161*
*Phone 806/742-3029 • Fax 806/742-3034*

# *FOOD PRODUCTION, MANAGEMENT, AND SERVICES*

## Crosswalk of the New Reference Book with the Existing Curriculum Guide

| **New Reference Book Chapters (2000)** | ***Chapters from the existing Curriculum Guide (1993) that contain selected instructional strategy ideas** |
|---|---|
| 1 | Chapter 1 |
| 2 | Chapter 2 |
| 3 | Chapter 27 |
| 4 | Chapter 29 |
| 5 | Chapter 30 |
| 6 | Chapter 28 |
| 7 | Chapter 31 |
| 8 | Chapter 32 |
| 9 | Chapter 33 |
| 10 | Chapter 3 |
| 11 | Chapter 4 |
| 12 | Chapter 5 |
| 13 | Chapter 6 |
| 14 | Chapter 7 |

*The new 2000 Reference Books contain new and updated information not addressed in the 1993 Curriculum Guide nor the old Reference Book. Therefore, instructional strategies related to this new content information cannot be found in the 1993 Curriculum Guide. New curriculum guides, corresponding to the 2000 Reference Book and Student Activity Book, are scheduled for summer 2002.

# *FOOD PRODUCTION, MANAGEMENT, AND SERVICES*

## Crosswalk of the New Reference Book
## with the Existing Curriculum Guide

| New Reference Book Chapters (2000) | *Chapters from the existing Curriculum Guide (1993) that contain selected instructional strategy ideas |
|---|---|
| 15 | Chapter 8 |
| 16 | Chapter 10 |
| 17 | Chapter 11 |
| 18 | Chapter 9 |
| 19 | Chapter 12 |
| 20 | Chapter 13 |
| 21 | Chapter 14 |
| 22 | Chapter 17 |
| 23 | Chapter 18 |
| 24 | Chapter 16 |
| 25 | Chapter 15 |
| 26 | Chapter 19 |
| 27 | Chapter 20 |
| 28 | Chapter 22 |

*The new 2000 Reference Books contain new and updated information not addressed in the 1993 Curriculum Guide nor the old Reference Book. Therefore, instructional strategies related to this new content information cannot be found in the 1993 Curriculum Guide. New curriculum guides, corresponding to the 2000 Reference Book and Student Activity Book, are scheduled for summer 2002.

# *FOOD PRODUCTION, MANAGEMENT, AND SERVICES*

## Crosswalk of the New Reference Book
## with the Existing Curriculum Guide

| New Reference Book Chapters (2000) | *Chapters from the existing Curriculum Guide (1993) that contain selected instructional strategy ideas |
|---|---|
| 29 | Chapter 21 |
| 30 | Chapter 23 |
| 31 | Chapter 24 |
| 32 | Chapter 25 |
| 33 | Chapter 26 |
| 34 | Chapter 34 |
| 35 | Chapter 35 |
| 36 | Chapter 36 |
| 37 | Chapter 37 |
| 38 | Chapter 38 |
| 39 | Chapter 39 |
| 40 | None |
| | |
| | |

*The new 2000 Reference Books contain new and updated information not addressed in the 1993 Curriculum Guide nor the old Reference Book. Therefore, instructional strategies related to this new content information cannot be found in the 1993 Curriculum Guide. New curriculum guides, corresponding to the 2000 Reference Book and Student Activity Book, are scheduled for summer 2002.